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ABSTRACT

The ten articles in this yearbook were drawn from Arizona State University's Annual Reading Conference. The first two articles present different perspectives on current research in the teaching of reading comprehension, the third offers a systematic plan for teaching comprehension to remedial readers, and a fourth looks at reading as a tool for dealing with technological challenges from the mechanical arts to mathematics and the theoretical sciences. A fifth article offers suggestions for practical classroom activities for building and reinforcing comprehension skills in readers at all stages, the sixth defuses the controversy between the proponents of phonics-based versus meaning-based reading instruction, while the seventh discusses the effect of parents on children's early reading. The eighth article provides evidence of the effect of reading on ideas and life views and the ninth contains a history of speed reading in the United States. The final article describes a skills-based reporting system for migrant children--the Migrant Record Transfer System--which permits teachers to transmit skill information in the areas of mathematics, early childhood education, oral language development, and reading. (FL)

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READING: MORE THAN MINIMUM SKILLS

VOLUME 2

Second Yearbook of the Arizona State University
Reading Conference - 1979

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FOREWORD

Once again the Graduate Students in Reading Education (GSRE) have undertaken the publication of the proceedings of Arizona State University's Annual Reading Conference. This Second Yearbook is the result of their volunteer efforts.

Half of the ten articles included address reading comprehension, reflecting what has become a dominant concern in the field of reading. Thomas and Swanson on the one hand, and Wallen on the other, present different perspectives on current research in the teaching of comprehension. Howell offers a systematic plan for teaching comprehension to remedial readers. Briggs looks at reading as a tool for dealing with the technological challenges of the present and the future, from the mechanical arts to mathematics and the theoretical sciences. Parrish suggests practical classroom activities for building and reinforcing comprehension skills in readers at all stages.

The remaining authors have addressed an array of topical reading concerns. Eeds/Kniep defuses the escalating controversy between the proponents of phonics-based versus meaning-based reading instruction. Gentile and McMillan discuss the effect of parents on children's early reading, while Piercey, Simpson, and Bond provide evidence of the effect of reading on ideas and life views.

Butler did not present at this 1979 Conference, but his paper is included here as a unique history of speed reading in the U.S. and therefore of intrinsic interest to the reading field. Finally, Hunt describes a skills-based reporting system for migrant children. Though her focus is math, the Migrant Record Transfer System also transmits skill information in the areas of early childhood education, oral language development, and reading.

Dr. Jeannette Veatch again headed the GSRE's editorial board for this Second Yearbook, while Dr. Sarah Hudelson served as an advisor and in-house anchor. I congratulate them, the GSRE board, and all the contributors for the quality of this publication.

N. J. Silvaroli
Director, Reading Education

RECENT RESEARCH AND THE TEACHING OF READING COMPREHENSION: SOME PROBLEMS AND A PROPOSED SOLUTION

Keith J. Thomas
Charlene Clemens Swanson*
Arizona State University

Classroom teachers are seldom as frustrated in teaching various reading behaviors as they are with the development and improvement of their students' abilities in comprehension. Save for a few definitive professional books on this topic (Pennock, 1979; Pearson & Johnson, 1978; Smith, 1975) the practitioner is hard pressed to find much real substance in most general reading methods texts concerning the topic of comprehension. Indeed, it would appear that the typical advice is to ask the right questions of the right students at the right time. Regardless of this statement, the "state of the art" in comprehension pedagogy is largely ambiguous and superficial. Furthermore, we contend that these conditions are the result of three elementary circumstances.

First, comprehension is exceedingly difficult to define, to identify, to invest with any substance. As Carroll (1977) notes:

> Reading comprehension has to do with understanding any kind of literary product, or the ideas and ideologies of any special interest group. Reading comprehension, we now perceive, is really an enormous topic. It could embrace all knowledge, all science, all of human experience. (p. 2)

Such a discussion is beyond the scope of this paper and we have elected to leave these potentially philosophical musings to others.

The second circumstance is considerably more tangible though no less disconcerting for most reading specialists. Much of the research on comprehension that is relevant to pedagogical considerations comes from disciplines outside the field of reading. Various areas of verbal learning and/or linguistics that may

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provide new insights into these processes are not part of the usual repertoire of reading specialists.

It is the third circumstance, however, with which this paper is principally concerned. Our thesis is that those individuals carrying out applied research are frequently unaware of or ignore findings from basic research in other disciplines. This research from other disciplines can have an impact on reading research in general and research on comprehension in particular. We believe this ignorance of basic research to be extremely critical, for it is from applied research that classroom pedagogy is typically generated. In short, the extent to which uncertainty exists appears to be a logical consequence of the type and nature of research characteristic of empirical studies in reading comprehension. What follows, thus, is not a criticism of this research, but rather a critique of its scope.

Two lines of prolific research that exemplify this situation may be identified as "adjunct questions" and "advance organizers." The former has had its genesis principally in the work of Ernst Ruthkopf (1965, 1966) and Lawrence Frase (1967, 1968a, 1968b, 1968c), and has led to the development of the "mathemagenic hypothesis" (Rothkopf, 1970) which attempts to explain the how's and why's of shaping processing behavior of readers through the use of externally introduced questions. In his excellent summary of research involving adjunct questions, Vacca (1978) points out that this type of research usually consists of having subjects read an extended prose selection and then respond to questions that are posed either before or after the reading.

"Adjunct" researchers in general have manipulated such variables as: 910 position of questions, e.g., pre-reading, post-reading, or interspersed (Rothkopf, 1966; Frase, 1967); (2) types of questions posed (Rickards & DiVesta, 1974); and (3) type and position of questions (Rickarcs, 1976). The numerous insights gleaned from this line of research have been well cataloged by Anderson and Biddle (1975), Faw and Waller (1976) and an excellent synthesis may be found in the work of Koehler (1979).

However, due to the rigors of design generally employed in these studies, it is extremely difficult to generalize the collective findings to specific applications in the typical elementary or secondary classroom. Nevertheless, a summation should include, but not necessarily be limited to, the following points:

1. Questions, whether constructed by the teacher or written by the author(s) of prose material, can have a profound effect on learning from text and on the subsequent development of text-processing behavior of readers.

2. The desired effects of the encounter with prose text should be weighed cautiously by the teacher during instructional planning. Teachers must give careful consideration to (a) the types of questions, and (b) their positional effect. These decisions may well influence the type and amount of learning that occurs; for example, short-term mastery of facts or generalizations (or both) versus long-term retention of generalizations or facts (or both).

The second avenue of research, "advance organizers," has its roots in Ausubel's theory of meaningful reception learning (1963a, 1968).

The advance organizer is Ausubel's principal pedagogic strategy and involves the use of appropriately relevant and inclusive organizers designed to facilitate learning. As Klausmeier and Goodwin (1966) note:

> The advance organizers are not topical outlines of the new material presented. Rather, they are short expository passages that perform three main functions--provide a general overview of the material, provide organizing elements, such as subconcepts, and point out how previously learned related concepts are basically different from or similar to the new ideas presented. (p. 87)

Organizers are supposed to be introduced prior to the learning material. They should be formulated in terms already understood by the learner, but they should be presented in a conceptual form that is at a higher level of abstractness, generality, and inclusiveness than the new material (Ausubel, 1963b).

Trying to make sense for classroom practices out of the plethora of research is a veritable nightmare. From Baker (1977) who reviewed 52 studies, and Barnes and Clawson (1975), who looked at 32 studies, several recommendations for future advance-organizer research are to be found. The following was one, pointed out by Barnes and Clawson:

> Carefully meet all of the required conditions for experimental research including random assignment of subjects to treatment groups, maintain independence of subjects, use the appropriate statistical

> tests, test for mastery of the organizer prior to presentation of the material to be learned, be certain that the test of the advance organizer and all tests of the material to be learned are different from one another, include a retention measure if possible, follow established procedures for test construction and maintain high reliability and validity. (p. 657)

This recommendation certainly implies that much of the advance-organizer research has been less than exemplary. No wonder results have been mixed and difficult to interpret. Do advance organizers facilitate learning? Yes and no.

As Vacca (1978, p. 56) points out, the two previously delineated areas of comprehension research, while essentially based on differing theoretical orientations toward learning, have an empirical common denominator.

> Each of these paradigms involves the manipulation of adjuncts to the prose material to be learned. The common denominator in both Ausubel's advance organizer paradigm and in Rothkopf's adjunct questions paradigm is that emphasis has been on what the reader does during learning. Faw and Waller (1976, p. 692) assert that this experimental emphasis has led to a "simple" methodology in the study of prose learning: "manipulate the students' activities during acquisition...and observe what effects these variations have on learning and retention." (p. 692) (p. 56)

But "simple" methodology has a tendency to lead to oversimplification when research is interpreted and applied to classroom practices.

An area of basic research which has been virtually ignored by the "adjuncts" and "organizers" is that of text analysis, or the impact that the nature of the material may have on the learner and the process of learning. McConkie (1977) suggests that text used in research should be thoroughly analyzed for several reasons. In order to study what subjects retain from a passage, whether the researcher is using free recall or questions as the measure of comprehension, all the information in the passage must be described. Another reason for analyzing text is to identify those characteristics that are most likely to influence what is retained and what is not. Finally, since not all results will hold for all types of text, the text must

be described in order to know to what type of text the results can be generalized.

The procedure for analyzing text developed by Meyer (1975) and the results of studies using that procedure serve as an example of the contribution from text analysis research.

Meyer's (1975) prose analysis procedure relies on Fillmore's (1968) case grammar and Grimes' (1975) semantic grammar of propositions. It allows the researcher to arrange the content of a passage so that the most important ideas and relationships are at the top of the hierarchy and the least important ideas and relationships are at the bottom. The relationship at the very top which holds the passage together is called the top-level structure (Meyer, 1977). Several studies (Kintsch & Keenan, 1973; Kintsch, Kozminsky, Streby, McCoon, & Keenan, 1975; Meyer, 1971, 1975; Meyer & McConkie, 1973) show that information high in the passage hierarchical structure (superordinate ideals) is remembered better than information low in the structure (subordinate ideas).

Other studies indicate that top-level structure has an important effect on the amount of information recalled but that different populations recall more from different top-level structures (Brandt, 1978; Meyer & Freedle, Note 1; Meyer & Walker, Note 2). Two of the common top-level structures are the attribution structure and the adversative structure. The attribution structure lists a series of descriptive elements, while the adversative structure relates a favored view to a contrasting view. College students recalled more from the adversative structure (Meyer & Freedle, Note 1), while senior citizens recalled more from the attribution structure (Meyer & Walker, Note 2). Brandt (1978) found that poor readers recall more from an attribution structure, while good readers recall more from an adversative structure. Swanson (1979) found no significant difference in the amount of information recalled from either attribution and adversative top-level structures, possibly due to the time-order organization used within both top-level structures.

In addition, identification and use of the author's structure in organizing written recall has been found to be a better predictor than vocabulary test scores (Meyer, Brandt, & Bluth, Note 2). This of course is in agreement with the common sense notions of reading educators who have consistently emphasized the importance of teaching students to look for commonly used organizational patterns (Burmeister, 1974; Herber, 1970; Niles,

1965; Strang, McCullough, & Traxler, 1967). In a recent study ninth graders of all reading abilities were successfully taught to identify and to use the author's structure to help them remember information (Bartlett, 1978).

In short, text structure appears to be an important factor that can influence comprehension and retention of information. As such, future research in adjunct questions and advance organizers may prove more fruitful if such textual features are taken into account. Several studies of this sort have been completed and may serve as appropriate examples: Brandt (1978) investigated use of advance organizers (structure) with ninth graders identified as high, average, and low comprehenders. In other words, variation in text structure and reading ability were considered along with the presence of a specific advance organizer. Similar interactive studies taking into account characteristics of text have been conducted by Mayer (1978) and Meyer, Bartlett and Woods (Note 4).

Given the state of the art in comprehension research, it would appear that practical applications for classroom teaching will continue to be less than definitive until such time as more research is generated which attends to the interaction among text, subjects, and learning conditions. In other words, research should focus on the characteristics of what is being read, the characteristics of those doing the reading, and the learning conditions under which the reading is being performed.

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TEACHING READING COMPREHENSION: RESEARCH IMPLICATIONS

Carl Wallen
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Reading comprehension is poorly taught in many elementary and secondary school classrooms because the teachers in them confuse student's completion of commercially produced materials with the teacher's arrangement of the instructional conditions that optimize student learning. The confusion between students' completion of materials and teacher's optimum arrangement of instructional conditions is illustrated by a study of five exemplary elementary schools. The schools were identified as being exemplary because the students in them made the most progress in reading achievement out of an original sample of 741 schools. After observing and interviewing teachers in the five schools, Wilder noticed that:

> Classroom teachers do not conceptualize the area of comprehension apart from any other feature of their reading programs. When asked about comprehension, most teachers mentioned something about the comprehension exercises in the materials they were using.... Nowhere among the five schools was there apparent to us a definable, concentrated set of principles or procedures related to instruction for comprehension. (1977, p. 277)

The outstanding reading achievement of students in the five exemplary schools was attributed to the unusually high allocations of money and time devoted to reading instruction, and not to the competency of the teachers.

Two important principles for arranging instructional conditions are described and illustrated in this paper, time on task and corrective feedback. Students' reading comprehension can be expected to improve dramatically when teachers apply these two principles in their teaching of reading comprehension.

Time on Task

A considerable body of evidence indicates that the amount of time students spend learning a particular instructional topic is the single most important determinant of their mastery of that topic (Anderson, 1970; Anderson & Faust, 1973; Dressel, Schmidt, & Kincaid, 1952; Harris, 1968; Wanat, 1975; Wiley & Harinschfeger, 1974). For example, fourth-grade students given systematic practice in following written directions make more improvement in following written directions than fourth-grade students whose reading instruction did not provide active practice in following written directions (Calder & Zalatimo, 1970). Students who were given practice in answering inferential questions about what they had read were more able to answer inferential questions than students who did not participate actively in answering inferential questions (Wolf, Huck & King, 1967). The amount of time that first and third grade teachers devoted to teaching reading was positively correlated with their students' reading achievement (about + .40), whereas time the teachers spent doing such other activities as art, crafts, and giving management directions was negatively correlated with reading achievement (Stallings & Kaskowitz, 1974). Increasing the time devoted to reading instruction significantly improves students' reading achievement (Viars, 1976).

Of the two dimensions of time that can be identified, time on task and time allocated, the more important determinant of reading achievement is time on task (Arlin & Roth, 1978; Denny, 1974; Fisher, Filby & Marliave, 1977; Samuels & Turnure, 1974). Students are on task when they are actively participating in the act of reading, as indicated by behaviors such as reading silently or orally, or orally answering questions, or writing answers to questions. Students are off task when they are engaged in such behaviors as looking around the room, talking to neighbors, flipping pages, looking at pictures, or listening to the teacher give management directions. Both the on-task and off-task behaviors occur during the period allocated to reading. Studies have shown that on-task behavior affects student achievement significantly (Gump, 1971; Ozcelik, 1973). In fact, the amount of time students spend on task accounts for about three-fifths of the achievement variation of students (Bloom, 1974). The amount of time students spend on task can be altered, and when altered has a significant effect on student achievement (Anderson, 1976).

Surprisingly, students spend very little of their total classroom time on task. Extensive observations in the primary grades indicates that students spend an average of 80 hours a year on task in all the school subjects: reading, writing, mathematics, science, and so forth (Berliner & Rosenshine, 1976). When translated into the single subject of reading, this means that while the daily period allocated to reading in the primary grades may be 60 minutes, an individual student may actually spend only about 5 minutes a day in the on-task behaviors that result in improved reading achievement. Moreover, poor readers are provided with even less active participation in reading than the more able readers (Beimeller, 1977; McDermott, 1976).

Considering the importance to learning of the time students spend on task, and how little time students in school actually spend on task, it is clear that those teachers who are able to increase even slightly the time their students spend on task in reading will markedly increase their students' reading achievement. Students' present levels of reading achievement in the primary grades are attained in about five minutes a day of on-task activity. Imagine the huge achievement gains that would likely result from increasing students' on-task time in reading to even 10 minutes a day. Two characteristics differentiate those schools in both the United States and England where students make more than average progress in reading from those schools where students' achievement is average. Not surprisingly, those two characteristics are the greater amount of time allocated to reading instruction, and the more systematic organization of that instruction (Cane & Smithers, 1971; Wilder, 1977). A greater amount of time allocated to reading instruction and more emphasis on the organization of that instruction probably result in higher student achievement because students' on-task time in reading is greater.

Increasing the amount of time students spend on task in reading can be accomplished in three ways. First, organize the reading program in such a way that the teacher works directly with individual and small groups of students as frequently as possible. The surest means of keeping students on task is to instruct them individually or in small groups.

Second, focus instruction on a few clearly defined comprehension objectives, so that a considerable amount of time can be given to instructing for each objective. The objectives should be applicable across all content areas,--literature, social science, and science--so that

instructional time can be devoted to them in different "subjects." Here is a sample list of five objectives:

1. Categorization
   Group information under relevant headings
2. Summarization
   Identify major idea presented
3. Conclusion
   Identify underlying ideas in an unstated cause-effect relationship
4. Analogy
   Use a previously identified cause-effect relationship to infer what an analogous one might be
5. Critical Reading
   Based on internal criteria, such as supporting evidence, reasons, or logic provided in the selection, make judgments about the reasonableness or soundness of statements or events.

Third, extend the on-task instructional time for specified objectives beyond that provided in direct, teacher-led instruction by organizing instructional activities in such a way that students can self-direct their own instruction for those objectives. The self-directed instruction can be in the form of independent practice activities. Each independent practice activity should be designed for a specific comprehension objective. The independent practice activities should be sufficiently simple that they can be done without teacher supervision. And, the independent practice activities should be sufficiently interesting that students will want to do them. Motivation is an excellent way of extending on-task time. Here is a listing of independent practice activities for the comprehension objective summarization. Similar activities can be designed for any comprehension objectives.

Independent Practice Activities for Summarization

A. Beginning Levels (written or drawn)

1. Draw in a four-picture sequence the major events in a TV show or motion picture.
2. Draw a series of pictures that describe the key events in the school day.
3. Write suitable captions for pictures.
4. Draw a four-picture sequence of a science demonstration given by the teacher, or a field trip the students took.

5. Draw a four-picture sequence of a story the teacher read to the class, or a recording of a story the student listens to on earphones.

B. Intermediate Levels (written)

1. Write a short summary of books for a reader's guide.
2. As part of a report to be given in social studies or science, summarize the activities of certain people or the ways certain events occur.
3. As part of the process of searching various sources for information to be used in a report for social studies or science or literature, prepare note cards that summarize the information obtained from each source.
4. Write a summary of an editorial in the local newspaper.
5. Examine the adequacy of headlines in the newspaper, and rewrite those that are inadequate.

C. Advanced Levels (written)

1. Write summaries of large events or histories, such as a one-page summary of "The Story of the United States," or a one-paragraph summary of "The Future of the Oceans."
2. As part of a social studies unit on business and advertising, write a summary of the advertising campaign for some product.
3. As part of a story of legislative bodies (city council, state legislature, UN) write a short summary of the position of each representative on certain issues.
4. Conduct field studies by interviewing various people in the school or community, and writing summaries of each interview.

Commercially produced materials, by themselves, do a very poor job of keeping students on task, for two reasons. First, the paper-and-pencil worksheet that constitutes the major instructional activity of published materials is not intrinsically motivating. A test for the intrinsic motivation of an activity is the power of the threat to withdraw the activity. How many students would consider it a punishment not to be allowed to do their paper-and-pencil worksheets? In order to motivate students to remain on task when the teacher is not directly supervising them, the instructional activities must consist of more than the paper-and-pencil kind of activities contained in published materials. Second, most published programs use a

"shotgun" approach to teaching reading comprehension rather than a more focused "rifle" approach. The published programs are designed to teach numerous comprehension objectives rather than a few critical comprehension objectives. The published programs cover so many comprehension objectives that students' seldom have sufficient on-task time with any one comprehension objective to master it. The teacher can improve the effectiveness of the instruction in comprehension by focusing on a few critical objectives.

Corrective Feedback

The second principle for improving comprehension is corrective feedback. This refers to any of the numerous procedures that the teacher uses to tell the student if an instructional response is right or wrong. Feedback can be thought of as ranging along a continuum from a simple "yes-no" to the presentation of substantial corrective information (Kulhavy, 1977). Corrective feedback informs the student about errors shortly after they occur, and guides the student in making appropriate corrections as they are needed. By identifying and correcting errors early, the teacher can insure that they are not compounded with later errors.

The simplest kind of feedback can be demonstrated by the sequence followed with a single frame in a programmed reader. The learner is presented with a stimulus, makes an active response, and then feedback is provided.

Components	Frame in Programmed Reader Directions. Circle the correct answer. When you have checked your answer, pull the card down and check it.	
1. Stimulus is presented	Did you cat / cut your finger?	
2. Response consists of student circling a word	Did you (cat) / cut your finger?	
3. Feedback is provided by student pulling down the card covering the correct answer	Did you (cat) / cut your finger?	cut

Research shows rather conclusively that feedback works to increase what a student learns from an instructional exercise (Anderson & Faust, 1973; Anderson, Kulhavy & Andre, 1971; Gagne, 1970; Gilman, 1969; Dressel, Schmidt & Kincaid, 1952; Hanna, 1976; Surber & Anderson, 1975). For example, if the correct answers shown in the frame from the programmed reader were cut out so that students could not check their responses against the correct answers, they would not learn as much from doing that instructional exercise as they would if the correct answers were left in so that they could check the accuracy of each answer.

Feedback will facilitate learning only if the student is required to respond before the feedback is provided (Anderson, 1970; Anderson & Faust, 1967; Brown, 1966; Faust & Anderson, 1967). The provision of feedback before the student is required to respond actively will occur with the programmed reader if the student pulls the card down and looks at the correct answer before circling one of the two answers in the exercise. The provision of feedback before an active response is required occurs constantly when students are taught in groups. The teacher asks a question, calls on one person, and then provides some feedback about the student's response. The other people in the group remain inactive. Not surprisingly, the only students who learn much when they are taught in groups are those who are actually called on to answer the teacher's questions (Travers, Van Wagenen, Haygood, & McCormick, 1964).

Feedback functions in two ways: (1) it lets students know when they are right; and, (2) it guides them in correcting their inaccurate responses so that they are less likely to make the same mistakes the next time (Kulhavy, 1977). Feedback that guides students in correcting their inaccurate responses is more effective than feedback that simply confirms the adequacy of the student's responses with nothing more than a yes or no (Buss, Braden, Orgel & Buss, 1965; Buss & Buss, 1956; Anderson, 1967, 1970; Annet, 1964).

Four commonly used kinds of feedback are illustrated with the comprehension exercise completed by one student. John answered questions about a story. In light of the prior discussion about feedback, how would you rate their effectiveness in teaching comprehension?

PAPER I

John

1. Helen was a prisoner in Troy
2. It was handsomely carved
3. To hold Greeks

PAPER II

John

1. Helen was a prisoner in Troy (B)
2. It was handsomely carved
3. To hold Greeks

PAPER III

John

C 1. Helen was a prisoner in Troy
✓ 2. It was handsomely carved
½ 3. To hold Greeks

PAPER IV

John

1. Helen was a prisoner in Troy
good
2. It was handsomely carved
so it was But why did they decide to take it inside the city gates of Troy?
3. To hold Greeks
And it did. But for what purpose did it hold Greeks?

You should have rated the four kinds of feedback in the order given. Paper I will result in the least learning and Paper IV will result in the greatest learning. Paper I provides no feedback. This kind of non-feedback is given when students complete an assignment but never receive it back with comments from the teacher. Assignments where no feedback is provided, like Paper I, are "time fillers" that serve the management function of keeping students busy. They do not serve the instructional function of improving students' comprehension ability. Management of students is obviously important but it should never be confused with instruction. Paper II provides a very general feedback that tells the student nothing about what is wrong with the answers, and thus how they can be corrected the next time a similar comprehension exercise is given. The instructional effectiveness of an activity like Paper II depends on how motivated the student is by grades. If the student wants to receive a grade of A then the student may attend more carefully to the next assignment. Greater attention may result in increased comprehension. The problem is, the globalness of the feedback provided in Paper II gives the student no help in where to direct that motivated attention. Paper III gives a yes-no kind of feedback. The student is told which answers are wrong, but given no guidance in correcting them. The instructional effectiveness of a yes-no kind of feedback is directly dependent on the simplicity of the instructional task. With a simple two-answer, multiple-choice exercise like that shown in the programmed reader, the nature of the error is fairly clear. But with a constructed, free-response answer like the comprehension exercise shown in Paper III, the nature of the error is not at all clear, and so the correction of those errors is not likely to be understood by the student.

Only Paper IV provides the student some information about the errors in the answers. The next time the student does this kind of comprehension exercise, the student will have some idea about how these kind of errors can be avoided. Notice that the feedback in Paper IV is more than just a display of the answer the student should have had. The feedback shown in Paper IV is a personalized comment about this particular student's response. Because it is personalized, it will result in a greater improvement in comprehension than a more generalized yes-no feedback like Paper II or the frame from the programmed reader.

A kind of feedback that will result in even more learning than the activity shown in Paper IV is an interaction between the student and the teacher where the

student is guided in correcting responses. For example, after the student gives the answer, "To hold the Greeks," the teacher would say, "And it did hold the Greeks. But for what purpose did it hold the Greeks?" The student responds to that question. The student's response is followed by another feedback. That feedback leads to another question that is intended to guide the student in correcting the answer. The cycle of stimulus, response, and feedback continues until the student better understands how to correctly answer that kind of comprehension question. Because of this guidance, the student will perform much better on the next exercise which requires the same kind of comprehension.

A major weakness of depending almost solely on published materials to teach comprehension is that they seldom provide feedback that is any more corrective than Paper III. The published materials may tell a student if his or her answer is correct or incorrect. But, by their very paper-and-pencil nature, published materials cannot tell each student exactly what is wrong with each of his or her answers. And the paper-and-pencil program obviously cannot go the next step of interacting with the student in a way designed to guide the student in responding correctly to this kind of comprehension exercise. Published materials probably are almost totally ineffective by themselves in improving students' comprehension abilities because the feedback they provide is so ineffective.

Five minutes a week of the personalized interaction will result in significantly more gains in students' comprehension abilities than five hours of the almost totally ineffective kind of feedback shown in Papers 1 through III. The kind of corrective feedback that can be provided only in an interaction between one student and the teacher is so much more effective instructionally than that provided in activities like Papers I through III. Teachers interested in improving students' comprehension abilities in reading will find ways of providing the more effective personalized corrective feedback.

Conclusion

Reading comprehension is poorly taught in many elementary and secondary school classrooms because the teachers in them confuse student's completion of commercially produced materials with the teacher's arrangement of the instructional conditions that optimize student learning. The confusion leads to a heavy dependency on commercially produced materials to instruct students in

comprehension. Comprehension instruction that is limited to the use of published materials will be very ineffective in improving students' comprehension abilities because the published materials, by themselves, do a very poor job of keeping students on task for a sufficient length of time for learning to occur, and the feedback they provide does not help a student correct errors in comprehension. Comprehension instruction can be improved by supplementing the published programs with highly effective instructional activities designed and conducted by the classroom teacher.

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A TASK ANALYTIC APPROACH TO REMEDIAL READING COMPREHENSION

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Reading comprehension is clearly a topic of fundamental interest to teachers and also a topic of great confusion, as we don't know what it is or how to measure it or how to teach it.

Comprehension is a construct. It is a hypothesized psychological process that results in the ill-defined product known as "understanding." It is most conspicuous when it is absent. When students do not comprehend reading passages, it becomes necessary for teachers to teach them how. But what do we teach?

In order to find out what to teach, we must evaluate performance. In order to evaluate performance, we must compare. In order to compare, we must have a standard of comparison. The standard of comparison we select will greatly affect our operational definition of the thing we are evaluating. When we attempt to evaluate comprehension, we ask the student to engage in certain tasks. Their behavior on these tasks is not comprehension itself; however, their skill at comprehension is inferred from this behavior. Therefore, we may agree that students who can't outline the content of a recently read passage did not comprehend it. However, many of us would not agree that comprehension is outlining, or that teaching outlining teaches comprehension.

Students who can comprehend are skilled at finding the main idea, isolating relevant information, detecting sequences and outlining content. These activities, however, are not subskills of reading comprehension. Therefore, the inability to "find the main idea" doesn't necessarily imply missing "main idea skills" nor does it indicate the need for "main idea" instruction.

The task "finding the main idea" is an indicator of comprehension which is composed of subtasks. The absence of any of these subtasks is the best explanation for failure at the task. Whereas comprehension is a construct, and therefore not subject to subdivision, its indicators are. What follows is a task analytical approach to finding subskills which are essential and

common to those tasks from which we infer the existence of comprehension.

Deciding if the Student Can Comprehend

First we need to find out if the student can comprehend. In order to do so, we give the student a test. The test will therefore become our operational definition of comprehension. The kind of test we give will have as much to do with the student's score as the student's own skills.

If you review comprehension tests on the market today, you will find that most of them require the student to read the passage and recall information about it. If the student answers the questions, we say the material was comprehended. Because the questioning comes after the reading, memory intrudes into this definition of comprehension. Suppose you asked a student some questions a) before reading the passage, b) immediately after reading it, and c) 6 months later. The student's score on questions a, b, and c would almost certainly vary. Would you conclude therefore that their comprehension of the passage has varied, or their memory of it?

When we question students after they have read a passage, we are primarily testing their skill at anticipating our questions. To the degree that they attend to and remember what we think is important we say they have comprehended. This "read then question" format has low content validity because it isn't the way people read in the "real world."

When you or I pick up something to read, we already have the questions. These questions are in the form of our beliefs, interests and attitudes. We read to find what we need to know and what we like; therefore our reading and our comprehension is a searching process. Valid tests of comprehension evaluate the student's ability to search out and locate information--not simply to recall what was read.

There are four common types of tests which can be used to decide if the student can or can't comprehend. Each one should be used with a paragraph of about 250 words.

Questions. Asking questions is the most popular way to evaluate comprehension. Often these questions are grouped according to categories such as those proposed by Barrett (1968). The advantage of questioning

is that the teacher can focus on information which they believe to be of particular interest. The disadvantages are: 1) it is hard to write several questions of equal difficulty, making scoring impractical; 2) the questions may not correspond to the postulated categories; 3) the categories may not even exist; 4) criteria for the pass/no pass distinction are not determined; 5) the student's answer is determined in part by the question asked.

Paraphrasing. Paraphrasing is often described as the ultimate comprehension measure because if a student can rephrase a passage into their own words they must have comprehended it. The advantages of paraphrasing are that it gives an overall impression of the student's understanding while not constraining the student's response to particular aspects of the passage. The main disadvantage is that paraphrase responses are nearly impossible to score. If the teacher decides that certain elements must be included in the answer in order for it to be correct, then the teacher is focusing on aspects of the passage without warning the student of the focus. In other words, in order to score a paraphrase response you have to negate the advantages of paraphrasing.

Cloze. Cloze is the process of omitting every nth word and having the student fill in the blanks. The advantages of cloze are: 1) it is easy to score; 2) the student makes use of many types of information to arrive at each answer; 3) the answers aren't controlled by the questions. The disadvantages are that it only works with redundant text material and may not focus on what you (as the teacher) believe to be the essential aspect of the passage.

Maze. Maze is the multiple choice equivalent of cloze. In maze every nth word is omitted and several choices are substituted in its place. The student is asked to select the best choice. The advantages of maze are: 1) it is easy to score; 2) success depends upon all types of passage information; 3) the distractors may be selected to vary item difficulty and/or to control the focus of the test. The primary disadvantage of maze is the risk of poorly selected distractors.

Any of these four procedures can be used to determine if a student is or is not comprehending a passage. Of the four, questioning (the most commonly used) is the least valid. The best procedure for making a pass/no pass distinction is a combination of cloze and maze such as the one described by Margot (1976).

The remainder of this presentation will focus on skill explanations for the student's "no pass." However you should always remember that the first explanation to check is that the test not the student is at fault.

Determine Why the Student Didn't Comprehend

Comprehension is a psychological process and therefore it cannot be truly segmented. However, the procedure followed in a task analytical evaluation is to segment the task into subtasks and then to test each subtask. Therefore for the purpose of this discussion, I will maintain that comprehension has two subtasks and two prerequisites so the task analytical model can be applied with some modifications. The subtasks are language skill and vocabulary skill whereas the prerequisites are decoding and knowledge of the content. These classifications are only used to facilitate my necessarily brief discussion. In this instance prerequisites and subtasks, once identified, are not arranged according to difficulty or complexity but according to the probability that they account for the no pass the student received. The entire procedure is illustrated in Figure 1.

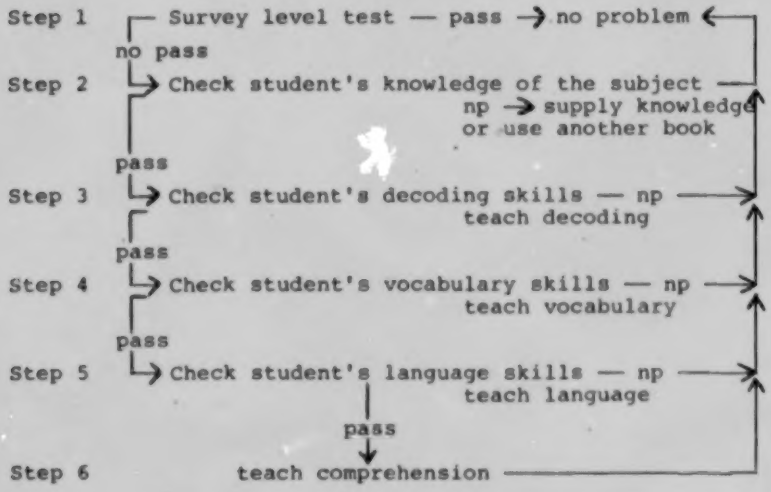

Figure 1. Steps for Evaluating Reading Comprehension.

Prerequisite knowledge. Comprehension takes place as an interaction of the information in the text and the knowledge of the reader. Consequently a passage does not have a stable amount of material to be comprehended. How much there is to be understood depends in large part upon what is already known.

You may comprehend the material in this article because you are an educator and have some background information about this topic. If you are given a passage pertaining to high energy physics, you might not comprehend it. This does not mean your ability to comprehend has decreased, or that physics is more complex than education; it merely means you aren't informationally prepared to comprehend passages in all content areas.

The only way to find out if a student did not comprehend a passage due to a lack of prerequisite information is to supply the information. If the comprehension score changes, the explanation for the low first score was probably a lack of prerequisite knowledge. This is a difficult procedure to use. It's easier to simply match the test passages to the student's stated areas of interest and knowledge or to test on several passages and note any variability in the scores.

Prerequisite decoding. Decoding print is a prerequisite to comprehending it. This statement includes not only accuracy of decoding but rate of decoding.

Vocabulary. If a student does not comprehend a passage which they can decode and have some knowledge about, the next probable explanation is that they don't know what the words in the passage mean. Vocabulary is said to account for up to 70% of the variability in comprehension scores (Farr, 1969; Waugh, 1978).

If you think the student does not know what the words in the passage mean, test to find out. Do not ask for definitions of the words. Test the student's knowledge of the meaning of the word in context. For example:

Read this phrase: "...what the words in the passage mean..."

In the phrase, does mean refer to

a. the average
b. bad tempered
c. intent.

You must test the student's ability to modify and select word meanings through consideration of the context in which the word appears. Similarly you should test the student on words from the passage they did not pass. Standardized vocabulary tests are useless when verifying this explanation for the absence of comprehension.

Language. Another explanation for comprehension difficulty is language. Suppose you have a student who knows what the passage is about, can decode it and knows what the words in it mean, but can't understand it. What do you do?

Given the situation described above, the first think you should do is reconsider the criteria you used to decide the student did not pass the original comprehension test. Next you should check the language and the language and the language of the text. To the extent that the student's language varies from the text language, they will have difficulty comprehending.

When assessing language, do not use an elicited language test or any of the psycholinguistic devices to evaluate the student. The best procedure is to use a spontaneous language sampling technique such as the one described by Lee (1974). Be particularly sensitive to the student's or the text's use of colloquialisms and regionalisms.

Instruction. The remaining high probability explanation for why a student didn't comprehend the passage is that s/he was never taught how to comprehend. This explanation, although arrived at through a process of elimination, is probably correct in the greatest number of cases. Comprehension scores can be increased, indicating that comprehension can be taught. However in most classrooms where attempts to teach it take place, the instruction is misdirected. The majority of teachers seem to have accepted the idea that comprehension subskills can be categorized under common headings like "locating the main idea" or "recognizing the sequence." Consequently teachers try to teach students how to find main ideas and sequences. In doing so they direct instruction at the indicators of comprehension rather than at comprehension itself. There is little support for these procedures although their surface logic has strong appeal.

The most effective techniques for improving comprehension are the so-called "pre reading techniques" (Waugh, 1978). In these systems the student is given background information, essential vocabulary and

objectives for reading before they are given the paragraph. This aids them in their search for specific information within the passage, thereby giving them successful experiences in comprehension.

Summary

Considering that no one seems to know what comprehension is, we should be skeptical about believing we can recognize, test, and teach components of it. We can, however, tell if it has taken place and test out explanations for why it doesn't. The explanations we test out can be viewed as skill prerequisites and/or subtasks. If one of these skills is missing, the implication is that it should be taught. Activities such as "finding the main idea" are not subtasks or prerequisites of comprehension. They are merely indicators that comprehension has taken place. Finding the main idea of a passage, as with any comprehension activity, is dependent upon: background knowledge; decoding skill; vocabulary skill; and language skill. In addition, the failure to comprehend can be explained by the absence of appropriate comprehension instruction.

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LEARNING READING SKILLS IN A TECHNICAL SOCIETY: A CHALLENGE FOR THE FUTURE

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In the war against illiteracy public school teachers are facing major problems. One is that teachers are dealing with a public that is demanding basic literacy programs but is not quite willing to pay for them. California's Proposition 13, with severe budget cuts and demands for quality literacy programs, is an example.

Another serious problem teachers face is a reluctance of parents to see that children do homework assignments or to provide an environment where reading and study can take place. They want the school to assume all of the responsibility.

Another serious issue has been raised by state legislatures: accountability. The intentions of the lawmakers were good, but the systems analysis model they borrow from does not really fit education. Thus, resulting programs tend to produce test scores rather than flexible, motivated readers. We have to resist this movement, and the state legislatures that facilitate it, by making sure that instructional models produce flexible readers and not superficial test scores. We must take a long term position that will eventually change accountability legislation so that instructional programs produce readers rather than test scores.

A further, irritating problem is found in a new crop of pseudo-critics. There is one book called The Literacy Hoax that is an atrocity. The author takes test data that were collected for cumulative norms on specialized populations and then generalizes them to mass populations. This produces a mediocrity effect on the norms and gives a depressed evaluation to many programs. Those in our legislatures who listen to these critics must be told what is really going on and must be given alternatives.

Another upsetting issue is a brittle cynicism manifested by certain types of high school students. They sit at their desks and say, "I dare you to teach me!" Most young people are pretty sharp. It is difficult to fool an adolescent for very long. They see

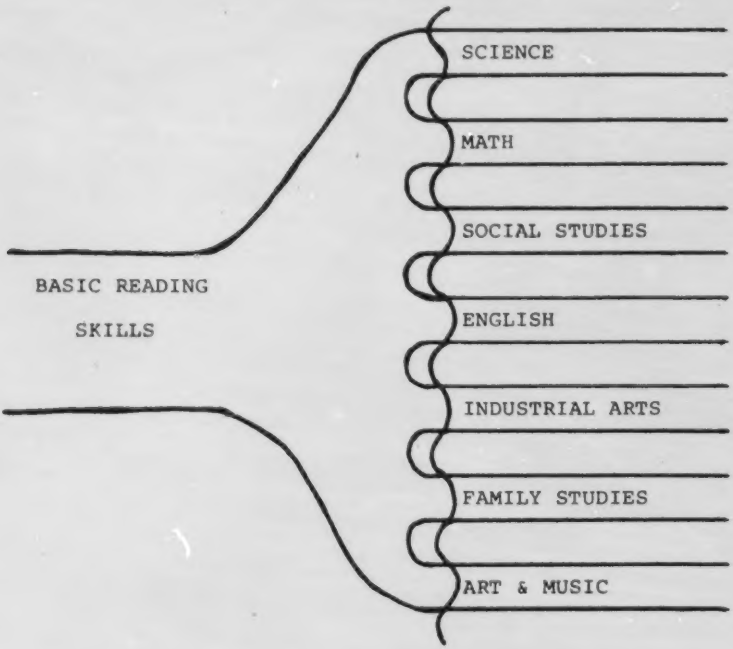
those who played the game, learned to be good readers, earned their degrees, and are now working at McDonalds. In a society where so many things need to be done, one of the commitments that society should make is to utilize the talents within the society, the bright young people. This tremendous potential cannot be wasted even though it doesn't always fit under the profit structure. We must reaffirm the commitment to our young people if the society is going to survive. If they play the academic game that we have outlined for them, learn to read, become good students, then there must be a payoff at the end. They want a good job. They want to offer something to society. What a crushing, devastating experience, to play the game and have the contract defaulted.

In spite of all these problems we still have to do the job of teaching reading in order to build viable programs. I believe in teaching the basic reading skills, the decoding process, but that isn't enough in the technical society we live in today.

In 1942 the Army definition of literacy was to read general orders and sign the payroll. Now we must go beyond that. Reading isn't a single generalized skill. It is a whole series of specialized skills. We must differentiate reading skills. The physics book doesn't read like the Bobbsey Twins at Snow Lodge. The chemistry book reads differently than the physics book. The transition from elementary schools to the secondary school is that students run into a history book that doesn't tell the story of American history. It is loaded with facts and concepts, legislative acts, and dates. No wonder boys in middle schools get lost.

The girls adjust more rapidly to this change in books, but the boys in the middle schools or junior high schools are lost. They don't know where to go. This is one of the critical transitions we have to make that belongs primarily to the secondary teachers. Elementary teachers generally do a better job teaching reading than secondary people do. However, the emphasis in elementary schools, as it probably should be, is on narrative reading, although some series of elementary reading materials now differentiate reading skills. The McGraw-Hill series has sections, starting at the fourth grade, that suggest some differences between reading the social studies and math and sciences. Then, when students get to junior high school or middle school age the transition isn't so difficult.

The design in the illustration below is quite useful for building reading programs.



Basic reading skills include basic decoding, attack skills, sight vocabulary, and syntactical training. Basic reading skills are essential for all students. The phonics arguments, the decoding arguments, are not one or the other, they're all of it. Balanced attack skills--phonics, structural analysis, context analysis, and the dictionary--must be strongly reinforced. Basic sight vocabulary is part of the essential program in the elementary school and must be reinforced in the secondary school. Someone must assume the responsibility in a reading lab in the secondary school or as part of an English unit within the English class.

To return to the illustration above, the wavy line shows the division of responsibility between the general reading teacher and the specialist. The reading teacher can only begin the differentiation process. As reading

teachers are often English teachers converted into reading lab teachers in the secondary schools, they tend to be math illiterates. Similarly the sophisticated areas of science and industrial arts are particularly technical, thus one of the hardest kinds of reading for students and often beyond the scope of the English/reading teacher.

Some generalizations can be made about these different areas: first, reading in the science area. There are three or four different kinds of reading in science. Much of the reading in science is descriptive reading, the kind of reading that suggests taking a pencil and drawing the picture. The book is describing structures highly dependent on technical or scientific vocabulary. As that vocabulary is 90 percent Latin-Greek, structural analysis is really the key to teaching science. Science teachers should be very aware of this and develop vocabulary as they go along.

In physics, analytical reading must be translated into mathematical formulas and mathematical constructs. Immature students need help. In physics, teachers fail to recognize this problem. Who will? A lot of the reading in science is procedural.

In generalizing the reading skills in math, notice that math problems tend to be written backwards. The beginning of the paragraph is packed with irrevelant data, irrelevant until the end of the paragraph that asks for some kind of comparison, proof or solution. Then you can go back and sort the data and deal with them. Words such as linkers, conjunctions, and articles are the relationship words. They equate words that take on special meanings, and these meanings are the key to the procedures being used. "And" is additive. "Or" and "the" take on special meanings. The compressed math sentence is very concise and must be decoded in terms of these key relationships. This has to be taught very systematically by someone trained in mathematics.

The social studies have more different kinds of reading than any other one discipline because they are a multi-discipline. Anthrobiological material, sociological, economic, historical, and geographical material are all written differently and by several authors. Helping students make the transition and adaptation even within one-author books is a critical skill.

In English we have a similar problem. Each form of literature should be read differently. A novel is not like a short story. Moreover, English teachers tend to put the emphasis on interpretation rather than

on reading skills, and usually on the teacher's own interpretation. Many English teachers tell students "when you come into my class, you are going to read good literature." In this environment, a rebellious student is in trouble. By the time he has graduated from high school, we have taught him to hate to read very effectively, by overprescriptive, mis-directed, well-meaning programs. The love of reading has to begin in the elementary school and be promoted and stimulated throughout the grades. English teachers need to put more emphasis on how to read rather than on what to read.

The one thing that is the biggest difference between underdeveloped and highly developed industrialized societies is the missing middle echelon technicians, who are made by high reading ability. Most underdeveloped countries have some well trained engineers and a lot of laborers, yet technical reading that is so critical in a middle class technical society is missing.

In the area of family studies reading is like industrial arts reading. Not only technical reading and procedural reading, but another new area is evolving in family studies. It is evaluative reading, the consumer research kind of reading, a new form of critical, judgmental, technical reading. This is a very specialized kind of reading skill. It requires making critical judgments about consumer products that determine the quality of life.

As for reading in the arts, in California we have the new Framework for the Fine Arts of California. Agnes Morehead was the chairman of it just before she died. One of their recommendations was that arts programs of California should teach aesthetics and art history. This implies reading, of course, a totally different kind of skill. It involves making aesthetic judgments, looking at structures, looking at principles of design and color.

Taking all of these areas together, we find a range of reading skills in the typical public school. In the larger society reading skills are differentiated even further. One night in an international airport, I was sitting watching somebody read. It happened to be a lawyer. He became aware that I was peeking over his shoulder watching him underlining. I am always curious about what people underline, so I apologized and I explained to him what I was doing. He then showed me his briefs. He said, "It has taken 20 years to develop this system. It is really the key to reading law. I

underline the "shall's," the "will's," the "may's," the "must's" in red, then I put little responsibility arrows from the party of the first part to the party of the second part. Then I can re-read it very quickly. I wish they taught this in law school; I have had to teach myself how to do this. I did not really know how to read law." Almost every business has its own special kinds of reading. We should make the beginnings on differentiating reading during the public school years.

One of the critical areas is procedural reading. We get more criticism from the public on the lack of this skill than on any other. I think it should be done in simplified form as early as fourth grade, in more complex form in the middle grades and junior high school, and then again in connection with technical courses in high school. Procedural reading is reading directions and has some important principles all teachers should know. One principle is critical: never regress while reading instructions. If you encounter a word you don't know and you regress, you interrupt sequence. In directions, meaning is dependent on sequence. Your mind lingers when you regress in the middle of instructions; you change the order of sequence. So, when reading instructions, you read all the way through the directions. You will find they are loaded with nomenclature and directional vocabulary. At the end of the directions, usually in the last step, is the goal. Skim through and determine the goal. It is important to read all the way through and make sure you know what you are doing, know what you are trying to prove, what concept, what it is supposed to look like, what is the nature of the beast.

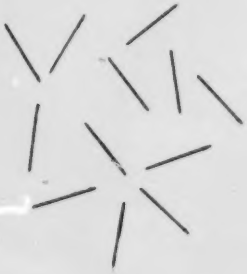
Each science has its own nomenclature. In military teaching, you took your rifle apart and named all the pieces. You can't assemble something with a thing-a-ma-jig or a gismo. Yet this is the way chemistry labs often run. You must know the pieces of elements in order to solve the problem. It behooves the teacher to make sure students understand the nomenclature before they're given the directions.

The next problem is direction vocabulary. You would be amazed if you tested students to see how crippled they are in this area. Beyond a few adverbs and some little adjectives, they have a pretty tough time giving directions. Start working with simple directions. Ask some of these students to give you directions on how to get downtown, or how to put a pillow in a pillowslip. After you standardize simple direction vocabulary and teach directions like "over,"

"under," "through," "left," "right," "east," "west," then you must go beyond that. In each discipline there is some specialized direction vocabulary. In electronics you integrate circuits, you modulate condensors, you splice wires. There are very technical words, special direction words, that have to be taught. It is essential that students know the nomenclature and have considerable drill and practice with such vocabulary.

To be able to follow instructions, write instructions, know the special nomenclature and directional vocabulary is critical. An electronics teacher tested his students by having them write instructions on how to do an operation. If they could, he was sure they knew how to do it. Someone would come and follow the instructions. If he could follow them, the student had written pretty good instructions. This is an important part of our technical education.

I would like to demonstrate the last important principle. This demonstration comes in the form of a self-administered test. Look at the three groups of marks provided below.



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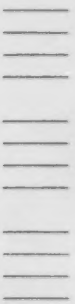

3.

Very quickly look at the first group. Estimate how many marks there are. Look at the second group. Estimate how many marks there are. Look at the third group. You can see there are three groups of four, and so are much easier to remember. It is important in reading instructions to skim through once and then group the instructions. There are data on this. It is impossible to remember over three or four items unless you overlearn or memorize. If you group instructions while

reading them, it enhances order and memory. There are natural groupings in all instructions.

Always keep the sequence in order. You can take this back to your classroom and teach it at the appropriate levels. It can be taught as early as fourth grade, in simple form. I think it should be reinforced again for junior high school students. As we get into differentiated programs, it has to be reinforced again and extended even further at the high school level by developing the technical vocabulary in the various disciplines.

There must be a design within each school where someone assumes the responsibility of teaching basic reading skills and beginning the differentiation process. There must be a uniform plan for how differentiation is going to take place and who will be responsible. This is essential in every school system. Reading is not a single generalized skill. To survive in this technical society, students have to differentiate their reading skills. Teachers and the public schools should not settle for simple decoding skills. They are obligated to go beyond minimum levels to differentiated skills. The discipline specialists are needed. English teachers are overloaded and can't possibly do the diverse job that needs to be done. This has to be a team effort.

Another important job is that of promoting supplementary reading. Students are peculiar. They don't read books the way the professional literature says they ought to. They go on kicks. A student who won't read for the English teacher may be really turned on in science. And a student who is not turned on in science may be turned on in industrial arts. Most students will not read in every department of the school. The best we can hope for is that some teacher will turn each student on in the discipline where he has a natural interest. It's even nice to have fairly literate coaches around. High school boys think they are the living end when they say, "Hey kid, here is a great book. Would you read it?" The boy grabs the book and runs home, fighting his peers for the book. If the English teacher asks the same boy to read the same book, he will reject it. It depends on who asks the student to read. Across the curriculum, if all teachers would promote supplementary reading, more reading would certainly take place.

Taking a look at the television, we know it is not a cop-out. If all teachers would be honest and ask whether television has affected their own reading habits

in the last five to ten years, they might find they do very little recreational reading, even though they may do lots of professional reading. It is easy to watch Centennial or Roots on television rather than to read the book. It is also affecting the reading habits of our kids. When they go to a home environment where most of the time is spent on television, listening and watching, little reading takes place. To acknowledge this and spin instruction off television is possible. A young teacher in San Diego devised a reading program that utilizes that spin-off from television. Students made observations about television, wrote about them and read in correlation with TV shows. By contract students could earn extra credit if they didn't watch television for a week and validated it with parents' signatures. Fine activities were developed by spinning off television. She felt students should take a media course to become critical viewers. In her media course, students ended up doing more reading and writing than they did in a regular English class. We need a lot more development along these lines.

We must do more motivational teaching. I believe in drill--but there are all kinds of drills. Some are essential to teach basic skills and some are "busy work." We've got to look at the kinds of stimuli that the kids are reacting to. Television knows. We may not like many of these stimuli but we need to be realistic and develop some really sincere interest in reading.

My accountability model is to have high school students graduate from high school wanting to be lifetime readers rather than saying, "I'll never read another damn book in my life." I think there is a dangerous number that react that way as they graduate. So this new accountability model focuses on making life-long readers who have differentiated their reading skills and can survive in this technical society. Your commission is a tough one and I know it can't be done tomorrow. I hope you go out and make a sincere effort to live up to this new accountability model.

WHY NOT USE THE GAMING APPROACH TO REINFORCE COMPREHENSION SKILLS TOO?

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The use of vocabulary games is a well-established and accepted teaching strategy. Its wide-spread acceptance is verified by the numerous books, articles, commercial packages, and teacher-made games that are seen in any elementary or secondary school. This paper will describe a practice which utilizes the advantages of the gaming approach and extends it to the area of comprehension development, without the disadvantages of many vocabulary games. It will present a philosophical stand of reading instruction based on a theoretical model of comprehension and then project this into a viable and practical classroom method--a method which can be used to develop understanding of any chapter, book, story, or common reading/viewing/listening experience.

Every teacher needs a wide variety of teaching methods to ensure student enthusiasm, motivation, and continued interest. Even more important is the teachers' continued enthusiasm, motivation, and interest. A wide variety of instructional strategies will keep both student and teacher alive and concerned with studying and interacting with the subject matter. In the Directed Reading Thinking Activity (DRTA), for example, a teacher must motivate, introduce, reinforce, and follow-up the reading experience. And a wide variety of techniques is needed for handling each part of this process, as well.

Currently the use of the gaming approach to reinforce vocabulary adds versatility to vocabulary instruction. The advantages of vocabulary games have been the topic of many journal articles and teacher discussions. Greer, Schwartzberg, and Laycock (1978) have listed four reasons for the popularity of instructional games:

1. Games are naturally motivating
2. Games reinforce learning
3. Games facilitate the individualization of instruction
4. Games foster affective and social development

Linda Jones (1971) stated, "By means of these games and game-type activities, reading and enjoyment become

associated with a concomitant increase in reading ability and interest in reading." She believes that games generate enthusiasm and positive attitude, which are essential to growth in reading. Glazer (1973) believes that education games can lengthen attention span in the classroom and help relax the classroom atmosphere.

Many teachers effectively use vocabulary games for reinforcement of specific word-analysis skills, as optional activities for students who finish assignments early, as rewards in instructional contracts, as a part of learning centers, and for individuals and small- and large-group instruction.

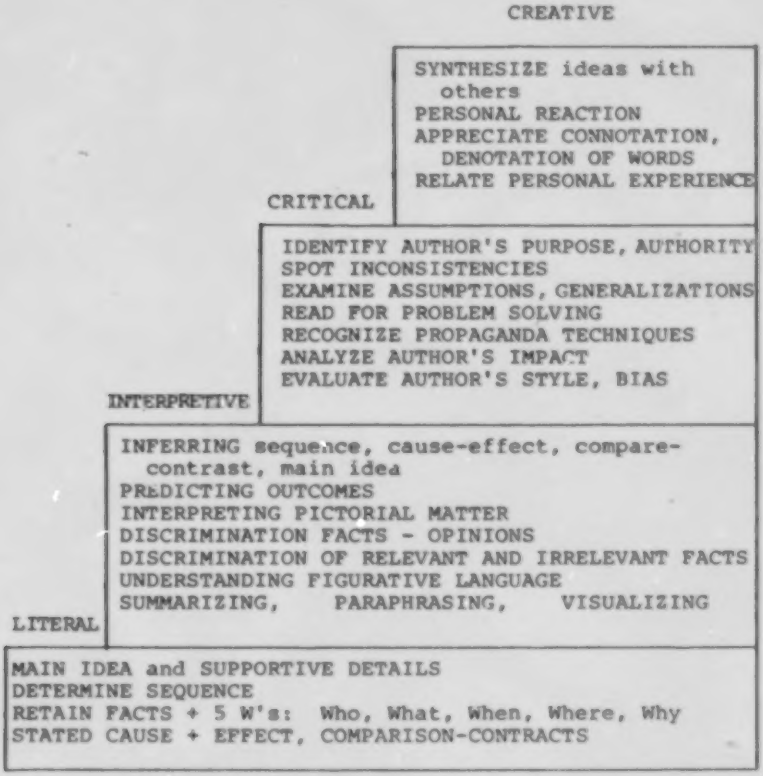
However, Richard Allington and Michael Strange (1977) have some serious reservations about reading games, as they are now being used. They recommend that "children should be presented the opportunity to read meaningful connected text. Unfortunately, reading games usually focus on skills in isolation rather than the application of those skills in a real situation. Regular use of games may be counterproductive for developing fluent reading since too often they offer no opportunity to integrate the skills into the holistic process."

We often hear about the lack of transfer of reading ability and skills from the Reading Center or Lab to the content area classroom. I believe that one of the reasons for this is the regular instruction of skills in isolation and not integrated as needed to comprehend a chapter, a story, and assignment. The reading is not functional, nor purposeful; it is something separate and quite apart.

Reading has often been described as a five-step process of recognition, understanding, reaction, integration, and application. Most vocabulary games include steps one and two only; they do not complete the reading process. Games such as word searches, codes, concentration, and Word Bingo require merely the recognition of the word. Crossword puzzles, matching, symbol puzzles, synonym and antonym games, Password, Probe, and Jeopardy require meaning or understanding. But why stop here? Why not use the gaming approach to include reaction, integration and application? This can be done with an appropriate and well-planned comprehension game.

Comprehension is a very complex process. Bloom's Taxonomy of Educational Objectives (1956) has been applied to reading comprehension by several authorities. Barrett (1972), Heber (1970), and N. B. Smith (1963) have differentiated the various levels of comprehension.

I have analyzed these and presented below a categorization of the specific comprehension skills using Smith's four levels for simplification.



This hierarchy of skills can also be applied to listening (Russell & Russell, 1959; Lunsteen, 1971) and viewing comprehension (Britton, 1978; Potter, 1979), and other receptive language arts skills.

In order to integrate the comprehension skills with meaningful, connected text, all or most (depending naturally on the material) of these skills are needed. A comprehension game can be devised which includes all

four levels of comprehension. How? The following guidelines will allow any teacher to utilize the gaming approach to reinforce comprehension skills:

1) The game should cover a shared reading/viewing/listening experience of all the players. It can be done with either small or large groups.

2) The game should focus on the most necessary skills to comprehend the material. It should not attempt to include all of the numerous and varied comprehension skills.

3) The game should extend or provide needed practice in comprehension as a holistic response to material. The individual, specific skills must have been previously taught either in an English class or the specific content area. This is a reinforcement activity.

4) The game format, display, rules, procedure, and art work should be appropriate to the age and ability level of the students.

5) It should be an interesting game, utilizing the concentration and mental involvement of all students, even when it is not their "turn."

6) The purpose(s) of the game should be made clear to the class. It must be appropriate to the unit of study, not a "fill-in" activity. Is it to review a unit for an exam? Is it to better comprehend an important chapter?

7) The directions must be simple, clear, and precise. Ideally, the directions should be written so a group of students could play without any guidance from teacher or aide.

8) Student involvement should be maximized. Use students as the judges for acceptable answers, timekeepers, referees, scorekeepers, etc. The teacher's role should be minimized, if not eliminated.

9) The questions must be developed from all four levels of comprehension (literal, interpretative, critical, and creative). The percentage of each level depends on the age and ability of students as well as the objectives of the lesson. The reward for correctly answering the questions should be appropriate to the difficulty level of the question. For example,

"move ahead one space" for correctly answering a literal level question, "move ahead 2 spaces" for an interpretative level question, and so on.

10) When an answer is judged wrong, the correct answer must be supplied either by the judge, a panel, or the other team. This explains "why" an answer is wrong, thus including "process" as well as "product" learning.

11) The game should include some element of change--some way that "fate" can intervene. Bonus cards, directions written on spaces on the board, referee announcement, etc., can serve to give or take away the advantage.

12) The incentive for winning must be appropriate to the age and interests of the students. Extra-credit points, points toward the next test, McDonald or Wendy coupons, tickets to the school dance or sports events, all provide motivation for participation. So does the fun of the game itself.

By nature these comprehension games are extremely adaptable to any reading/viewing/listening material by simply changing the questions. To be an effective teaching method, they must be well-planned and the rules of good sportsmanship adhered to by the class. After a few games of this type, upper elementary and high school students can even develop games themselves. This then makes the students develop questions so they learn how to analyze material and ask critical, creative questions. This works particularly well as a book sharing-reporting technique for a group of students who have read a book. It also works well for separate students, or a group, to construct questions for an upcoming chapter or review for a test.

Try the idea . . . . . I think you'll like it.

REFERENCES FOR IDEAS FOR COMPREHENSION GAMES

California Reading Association, Gameboards for Reading Learning Centers.

Although developed for vocabulary games, these very attractive gameboards could be used for comprehension games also. They are very useful for the non-artistic.

Comprehension Games Corporation, 62-83 Woodhaven Blvd., Rego Park, New York, 11374.

Commercial games on Drawing Conclusions, Getting the Main Idea, and Context Clues are available through this company.

Jones, L. Games, games, games--and reading class. Journal of Reading, 1971, 15, 41-46.

Ideas are presented for magazine and newspaper comprehension gametype activities. It also provides a comprehensive listing of available reading games.

Piercey, D. Reading activities in the content areas. Boston: Allyn and Bacon, 1975.

Includes several games which require the use of various specific comprehension skills in the content areas of English, speech and journalism but can be adapted to many other areas.

Vacca, R. Reading reinforcement through magic squares. Journal of Reading, 1975, 18, 587-590.

The article presents a game for reinforcing the skills of reading for cause-effect relationships. He suggests this same format can be used for other patterns of organization skills as well as for vocabulary development.

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Designed for grades K through 8, it can be modified for ninth and tenth graders. It includes games for the specific comprehension skills as well as vocabulary, dictionary, and syllabication.

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THE DECODING VERSUS ORGANIZATION CONTROVERSY

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Despite the almost certain disengagement of attention whenever the word "phonics" is mentioned around reading people, the great debate (cf. Chall, 1967) still rages. Instead of calling it the "phonics versus whole word" controversy, we now have some new terminology, but the division remains and appears to be widening. In recent months, both sides seem to have retrenched and taken all or nothing stances--each accusing the other of deliberately trying to keep little children from learning to read. This tendency to become emotionally attached and ego-involved in some particular method of teaching or defining reading and to interpret all data in light of that particular definition is understandable, especially when the advantages of such an attachment are considered. Many reading educators have such an investment in commercial teaching materials that changing one's mind would be financially untenable. But the espousal of one way of thinking to the exclusion of all others seems particularly disturbing among those who claim that intellectual inquiry and open-minded examination of objective data is supposed to be their primary reason for functioning.

The problem seems to have begun with the followers of Flesch who touted phonics instruction as the answer to all our educational ills--and even to some of our social ones--in such a simplistic fashion that reading people who thought of themselves as reasonable were often dismayed. They couldn't mention that they thought a code-breaking approach to beginning reading might be appropriate for some children without finding themselves identified with a group of people who also appeared to support John Birch, corporal punishment in first grade, and the research efforts of Arthur Jensen. It became embarrassing to admit that you thought children should know some basic sound-letter correspondences.

Recently, however, the other side has become just as unreasonable. Those espousing a "whole language" view of reading appear to be discounting any sort of instruction in word analysis, insisting on whole-word instruction in context even when it may not be appropriate or possible. They close off discussion with accusations that presenting words or parts of words in isolation will surely produce students who will only

"bark at words," eventually resulting in the most dreaded of educational outcomes--the wordcaller. Their snappy comeback to presentation of evidence that children who have been exposed to decoding programs can often indeed decode is usually something like "Well, sure, they can pronounce the words all right, but are they comprehending?" Somehow there's an implication that it's better not to have accomplished what for some children is a very difficult task--being able to pronounce the words.

Decoding Versus Organization

In a recent publication from the Center for Applied Linguistics, Dieterich, Freeman and Griffin (1978) described their perceptions of the division among reading educators with the phrase "decoding versus organization controversy." According to these authors, those who espouse a decoding philosophy (with decoding defined as being able to pronounce text with facility, not necessarily to extract meaning) believe that reading problems are primarily decoding problems. If a reader does not comprehend text because of difficulty in semantic and syntactic processing, these same difficulties will be evident when the same material is presented orally. If there is no difficulty in the oral-aural processing of the material, then any reading problem must necessarily stem from interference from the decoding task. Reading instruction congruent with this view would focus on decoding skills and oral language development.

Conversely, those who support the organization view of reading (according to Dieterich, et al.) would argue that written language is not the same as oral language and that it is very possible that comprehension difficulties may arise from processing structures in text which would not arise when the same structures are presented orally. In fact, they say, many written structures may never occur in oral language. Therefore, reading instruction must include instruction in the author's organization of the text.

The above definition of the controversy appears to miss the point, especially as it applies to the groups who used to call themselves phonics-based versus meaning-based. The issue seems better defined by examining the differing views of the decoding (or recoding) step in learning to become a proficient reader.

An organizational view of reading holds that proficient reading is a process of systematically predicting meaning in text and then confirming and revising predictions. These predictions are based much more on what the reader brings to the reading task in background or experience, ability to infer, and facility with processing text semantically and syntactically than on recognizing words in print. Historically, proponents of this view have deemphasized the decoding component on the grounds that it would be impossible for a proficient reader to use letter-by-letter processing because of the speed at which such facile reading occurs. Instead, the proficient reader must sample the print just enough to test his or her predictions.

Wanat (1977), however, has recently challenged this view by presenting Gough's (1976) argument that even for a fluent reader, reading can be a letter-by-letter process. Gough cites Rayner's research (1975) which indicated that the actual identification of word meanings seems to occur only for words beginning no farther than four to six letter spaces to the fight of the fixation point. If the mature reader can pick up as many letter spaces to the left of the fixation point (say an average of 5) then she/he should be able to pick up meaning identification information from 10 letter spaces per fixation. Since the mature reader averages about four fixations per second (Geyer & Kilers, 1974), the reader can pick up word meanings from 40 letter spaces per second. In a minute then, the reader can pick up 60 times this number or 2400 letter spaces. If a word is estimated to contain 7 letter spaces, a reading speed of approximately 340 words per minute can be arrived at by dividing 7 letter spaces per word into the 2400 available letter spaces. According to Sticht and Beck (1976), the optimal rate for comprehending text has been found to be about 250 to 300 words per minute. Since 340 words per minute is a very respectable reading rate, the argument can be made that a fluent reader can and does (but probably not always) process text letter-by-letter.

On the basis of this evidence, claims that the sound-letter system is only sampled can be questioned--perhaps it is taken in wholly by proficient readers. Other evidence, however, such as the reality of the responses of children reported by Y. Goodman and others (cf. Goodman & Greene, 1977) and the confirmation of our daily readings with children, provides much support for the view that children do make predictions in their reading in a highly interactive kind of process--and that they often go back and correct themselves when what they have predicted doesn't make sense. K. Smith

(1977) has reported that minimal cues are needed for children to be able to recognize words in context. He found that when every seventh word was omitted from passages of first through eighth grade difficulty, that readers could predict the missing word 74 to 96% of the time when supplied with only the beginning consonant of the missing word. He cited this evidence as support for the use of combined strategies for reading text rather than depending on a decoding strategy alone, suggesting that children be taught that reading is indeed, in Smith's words, "a guessing game with corroborative data" (p. 57).

With both groups agreeing that decoding must enter into the reading process, and each group agreeing that children must be able to process text semantically and syntactically, the explanation offered by Dieterich, et al., that the argument centers around whether reading difficulties can be remediated by working with oral rather than written language (or vice versa) does not seem sufficient to account for the anger and vehemence expressed on both sides of the decoding versus organization controversy. Actual differences appear to be matters of degree and emphasis, indicating that the heart of the disagreement may concern the materials and methods used to teach reading, as well as have something to do with the political affiliation of the proponents. It appears that we all have many more bases for agreement than disagreement, but a closer look at the controversy may clarify the issues.

Importance of Spelling-to-Sound Matches

Historically, much of the debate has centered around the importance of spelling-to-sound matches in reading instruction, or the role phonemic recoding has in the identification of words. That is, when children are learning to read, do they have to say the words they are reading to themselves covertly or overtly in order to get meaning from them? Can they get meaning directly from the print without resorting to some sort of recoding process which filters through the sound system? Do fluent readers do this? These are extremely important questions because the debate concerning the importance of phonics instruction centers around the basic question of whether or not anybody needs to use the sounds of letters in order to read. Evidence which confirms that no intermediary step of phonemic recoding may be necessary for fluent or for beginning readers to get meaning from print (cf. Barron, 1978) supports the meaning-oriented organization view. Those supporting

the decoding side of the controversy would argue, however, that whether or not phonemic recoding is necessary for getting meaning from print, it was necessary during the stage of acquiring the ability to recognize printed words. No one has yet determined exactly how this first understanding is acquired, although the notorious difficulty deaf children have in learning to read well is often cited as evidence for the necessity of the sound-to-spelling step in beginning reading. Decoding proponents would also cite recent evidence reported by Barron (1978) that supports the direct from-print-to-meaning hypothesis for single words, but indicates that some kind of phonemic recoding is necessary for processing connected text--that is, for getting meaning beyond the word level. He hypothesized that one of the reasons decoding skill may correlate so highly with reading ability is that good decoders can accurately and rapidly convert printed words into phonetic representations which can be maintained in memory. It may be that this phonetic step is needed for processing connected units of text. If so, Gough's thesis that proficient readers can and do process text letter-by-letter may lend a rather ironic twist to the controversy, since much has been written from the organization point of view which emphasizes that little meaning can be gleaned when words are presented in isolation and deemphasizes the role of sound-letter relationships in contextual reading.

Reading Instruction in Schools

Another major disagreement concerns the way that reading is taught in most of our schools. Some rather vocal proponents of the decoding philosophy espouse certain reading programs that purport to be more "phonics" oriented than the traditional basal. But it may be that the problem and its answer do not lie in published programs at all, but in teacher understandings of the acquisition of reading ability and the granting of the right to teachers to supplement, substitute or discard a published program based on their knowledge of the children they are teaching.

Some children seem to learn to read miraculously--it just happens. It's not uncommon for many to arrive in kindergarten knowing how to read. Others cause teachers to pray for miracles. F. Smith (1976) presented a case study of a child from the former group, urging teachers (on the basis of this sample of one) to just let children learn to read by reading. One child learned to read when she was five years old. Her

mother, noting that she was reading a book on hermits, decided to check her comprehension and asked her if she knew what a hermit was. The child replied, "I don't know, Mother, but I think its some kind of recluse."

There are indeed children like these two in the world. In fact, the majority of children probably would learn to read successfully if they were offered some motivation for reading and text was presented in meaningful situations. But there are children who need more focused instruction. They are the ones whose acquisition of reading ability may be endangered by unilateral statements to teachers that sounds or words must never be presented in isolation. Certainly this would not be necessary (though hardly damaging) for the majority of children who will have no trouble learning to read. These children don't seem to need explicit instruction in sound-letter correspondences and blending skills. They notice that words begin or end the same, or that a mere change in one letter in one place in a word can make a whole different word. They also extrapolate from words they have learned to other words that they encounter. No matter what reading program we use, and sometimes in spite of them, about three-quarters of our children seem to be able to learn to read with little difficulty. These are the children who need time to practice reading and to grow in skill by reading real books. They are the ones whose primary program should consist of opportunities to process text and to hypothesize about what is to come based on the knowledge --phonemic, semantic and syntactic--that they bring to the reading act.

Working With Children With Reading Difficulties

But some children do not find learning to read an easy task. They may learn 10 words beginning with m and not notice until it's pointed out that a new word begins with the same letter. They may know the words mad and down and not be able to segment the initial m from mad and substitute the initial d from down to form the new word dad. It is these children who, in addition to profiting from the same meaningful program of contextual reading as that described for the more facile readers, would also be helped by programs that make sound-letter correspondences explicit and teach them to blend these sound-letter correspondences together into meaningful wholes. This blending step is largely ignored in commercial reading programs, yet is apparently one that some children cannot acquire without

explicit instruction (Haddock, 1976). This does not mean that every child should be taught "phonics." In fact, programs recommended by many groups who insist that phonics will make better readers do not necessarily address the needs of these children. An examination of most phonics lessons will show that sound-letter correspondences are often not made explicit, and if they are, there are often not enough opportunities to practice them so that they are mastered before the next lesson is presented. Lessons are also presented to groups where the time for individual students to respond often totals no more than two minutes per day or where the teacher can't determine what response an individual child has made. Workbook exercises often expect the child to analyze words and tell which word has a "short a" or "long i," how many syllables are in the word, or where the unaccented syllable occurs--none of which are prerequisite to decoding ability. It is much more helpful for the teacher to make explicit the relationships between sounds and letters and how they can be combined (even if it means pronouncing them in isolation) than to expect children to pull this information from whole words always presented in context.

It has often been suggested by those espousing an organization view of reading that children be given strategies for processing confusing textual structures, e.g., for dealing with conditionals. However, it is hard to believe that any of us would advocate lessons dealing with the effects of words like because and although on sentence meaning when the children cannot yet recognize these words in print. Arguing about presenting these exercises orally or by using written materials seems a moot point when the basic skills that help children recognize the words have not yet been acquired.

It appears that both decoding and organization are important, interdependent and interactive aspects of reading ability and its acquisition. From the beginning of instruction the primary focus should be on getting meaning from what is read. But for those children who do not acquire decoding skills automatically upon exposure to print, or do not easily learn them with minimal instruction, the most direct access to meaning may be through specific instruction in those skills. The problem of which skills to teach arises, since much has been presented in the name of decoding instruction which is not worth the time it takes to teach and learn. But some areas of decoding skill do stand out as extremely worthwhile for teaching. Their mastery should give children the kind of corroborative data that they need to become readers who make good guesses as they interact with print.

Basic Sight Words

Children still need to know and be able to respond automatically to words that occur with high frequency in the materials they are likely to be reading. These words are often ones that aren't decodable even when sound-letter correspondences and blending skills have been mastered. For example, the and said are common words that don't follow a regular pattern, but need to be recognized instantly because of their high utility in English. These high-frequency, irregular words will be learned by most of the children as a matter of course as they go through any reading program, but there are children who need many repetitions of these words in order to recognize them instantly. Although it has been well established that children can recognize many more words in context than they can in isolation (Goodman, 1965; Lopez, 1977), children who are truly expert decoders do not often need context to help them tell one word from another. One way of looking at the controversy over presenting these words in isolation is to consider the facilitating effects of immediate word recognition on contextual reading. If a child must always see for or from in context to determine whether the word is for or from, some procedure to facilitate meaning is needed. Presenting words only in context may reduce the available time for practice with feedback that some children need. Despite warnings from reading theorists, there is no evidence that presenting words in isolation will damage a child's reading ability. In fact, such a presentation may make it easier for some children to learn a word's distinguishing features. If a list of words is taught that is based on highest frequency such as Durr's (1970) list of 188 words that account for 7 out of 10 of all running words in popular trade juveniles , children will be practicing these words in context when they read any written material.

Sound-Letter Correspondence

Children need to know what sound goes with what particular letter or group of letters--at least for those high-frequency sound-letter combinations that appear in the material the child will be expected to read. Much confusion can be averted in getting meaning if a child has mastered the differences between b and d or fr and tr. This doesn't mean that children should be expected to label fr and tr as consonant clusters or blends--only that when they see a word beginning with such a cluster that they can respond automatically with the likely pronunciation.

Blending Ability

Children need to learn to blend sounds and letters together into coherent wholes. They need to understand the simple alphabetic principal that by changing letter-sound correspondences within a word, new combinations resulting in new words can occur, and that by combining known patterns with those not previously encountered, one can figure out a word that is unfamiliar in print. Some effective techniques for teaching this skill have been suggested by Haddock (1978) and Wallen (1972).

Automaticity

Children need to learn all three of the above skills--basic sight words, sound-letter correspondence, and blending--to an automatic level. Recent reading theory and research (Laberge & Samuels, 1974; Mackworth, 1977; Samuels, 1979) indicates the need for automatic response to what is to be decoded so that ability to understand the passage is not impaired by an inability to decipher a word. Glass (1971) illustrates this well by using a word he made up--"distenationing"--to show how words never before encountered in print are decoded by proficient readers. Most people do not laboriously divide such a word by looking for a vowel - consonant-consonant-vowel (VCCV) pattern and then dividing between the consonants. Instead, most find that certain chunks of the word stand out--such as dis, ten, tion, and ing --which make it possible to pronounce such an unfamiliar word in a fraction of a second. Several implications can be drawn for teaching. High frequency patterns (cf. Fries, 1963), e.g., the CVC (consonant-vowel-consonant) pattern as in rat, raft, track, etc., and the CVC+e pattern as in note, choke, clothe, etc. as well as high frequency prefix, suffix, and syllabic patterns, e.g., tion, dis, ble/cle, etc. and high-frequency irregular words should all be taught to an automatic level of response. The standard for automaticity for these patterns has not yet been determined, and is probably something that each teacher needs to determine by comparing the level of response of those who seem to be struggling with those who are excelling in reading. For example, 80 to 100 CVC patterns could be presented to several good readers at a particular grade level, their average responses per minute noted, and this number of responses compared to the number of responses made by poorer readers. (See Figure 1 for a sample of such a presentation.) Teachers could judge their effectiveness at teaching these patterns by the gradual closing of the gap between the number of patterns successfully pronounced by good and poor

PROBE #1 BLENDING WITH MEANINGFUL CVC PATTERNS
(Initial and Final Single Consonants)

Criterion of Acceptable Performance

bob	mud	fizz	hex	tiff	wick	zig	(7)
pun	keg	yam	nab	hum	net	lag	(14)
ten	mop	beg	dog	tux	gas	mad	(21)
sup	pat	jam	fox	pick	peg	quack	(28)
gob	led	jot	dud	rib	lug	rut	(35)
top	but	cob	vat	cell	dip	kill	(42)
vim	fob	has	nod	rap	fan	gem	(49)
hoss	lock	bid	quit	pod	boff	gut	(56)
sob	sass	jut	wed	can	jet	doff	(63)
met	den	yip	queil	hip	cuff	yes	(70)
lit	sip	rob	nit	kiss	nut	jig	(77)
fed	wet	gin	kin	zip	tuck	red	(84)
yap	gip	quiz	wad	vix	sum	luck	(91)

Figure 1

readers. Because these high frequency patterns occur in all English words, the practice of reading any interesting material at the children's instructional levels would reinforce the use of the patterns in context.

Perfetti and Hogaboam (1975) found that good readers can be distinguished from poor by the speed with which they can pronounce nonsense and low-frequency printed words. LaBerge and Samuels (1974) have pointed out that children must have a level of automatic response to print that assures that attention to decoding does not interfere with comprehension of the material that is being read. The teaching of decoding skills to an automatic level is an area that virtually no published reading programs address, but may be one of the most important areas of all--especially in the decoding of words of more than one syllable.

The addition of a quick check to find out whether or not each child in any given reading program is functioning at an automatic level for decoding common spelling patterns and high frequency words may identify those children whose difficulties with reading do indeed stem from decoding difficulties. Those who have attained a level of automaticity that should allow them to focus on comprehending what they read and who still do not seem to be able to do so would appear to be prime candidates for programs which analyze their understanding (both orally and in writing) of certain confusing structures such as conditionals or anaphora, as is often advocated by proponents of the organization view of reading (cf. Goodman & Greene, 1977).

Advocating such specific instruction, especially of words and/or sounds in isolation, is controversial. It may again stir the ire of those espousing a more whole-language view of reading. Much has been written about the dangers of pronouncing sounds or words in isolation as part of reading instruction, but these warnings do not appear to be research-based. There is, in fact, some evidence to suggest that pronouncing sounds in isolation has no detrimental effect at all (Haddock, 1976, 1978). We do know that this is something good reading teachers do because they find these techniques helpful and effective when nothing else has been.

There's a lot of talk about children not reading these days--not only that they can't read, but that they don't.. Several studies report the not surprising news that children would rather watch television than read books. One of the reasons for this may be the

incredible kinds of things we have been asking children to do in the name of reading instruction.

A program which uses children's own language for beginning reading instruction, teaches to an automatic level the kinds of decoding skills that seem most generalizable, and lets children read real books written by real authors as soon as possible, is one that will assure that children do learn to read, and when they have learned, choose to do it. But any reading program can be made more effective if teachers are given the freedom to critically examine it, discard parts that are useless, supplement where needed, and stress meaningful rather than meaningless experiences. Helping teachers gain the right as well as the expertise to do this seems much more worthwhile than excoriating one another for what must necessarily be only an interpretation of emphasis.

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PERSONAL READING AS A CHANGE AGENT

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What happens when readers and ideas get together? Can reading change the nature of reality? Can reading change us, a little, as persons? Can reading cause us to act differently after we receive fresh insight into our own or other's lives? David Russell (1969) raised questions about whether the concept of change brought about by reading can, perhaps should, affect our teaching behaviors.

We can begin by reflecting on two vital questions: 1) If reading CAN'T change the nature of reality, how do we account for certain facts, occurrences and circumstances? 2) If reading CAN change the nature of reality, where does our responsibility as teachers lie?

If reading cannot change the nature of reality, how do we account for the extensive censorship that exists in the United States today? For example, the widely publicized but by no means singular, situation in Kanawha and Boon Counties in West Virginia in September of 1974 revolved around an English supplemental text and articles concerning burning draft cards and prison life (Arizona Republic, 1974). The reaction tally sheet read as follows: two men shot and seriously wounded; one man severely beaten; schools boycotted and shut down; coal mines for miles around closed; work at chemical plants, food warehouses, school bus depots disrupted.

Adolph Hitler banned all books except Mein Kampf. He himself at age fourteen found writings about war and anti-semitism to his liking.

In 1972 in Strongsville, Ohio, the Board of Education banned Joseph Heller's Catch-22, Kurt Vonnegut's God Bless You, Mr. Rosewater, and Cat's Cradles from use in high school literature classes because of alleged profanity.

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In Drake, North Dakota, Vonnegut's Slaughterhouse Five, James Dickey's Deliverance, and short stories by Hemingway and Steinbeck were banned for reasons of profanity. School officials burned thirty-five copies of Slaughterhouse Five in the school furnace.

Even dictionaries are not immune to the purge. In 1976 all copies of the American Heritage Dictionary at the Hanover High School in Indiana ended up in the principal's office. According to school officials, American Heritage was too comprehensive for the average high school student.

What better way to close a look at censorship than to remind ourselves that Ray Bradbury put his fears in a book called Fahrenheit 451.

If reading cannot change the nature of reality, how do we account for the following? Ford Clark's book , The Open Square, describes a killer who plots to use a tower to kill people and takes water, food, and ammunition for his siege. Charles Whitman climbed to the tower of the University of Texas at Austin with these things and shot 46 people, killing 15. The pathologist believed Whitman read that book.

Why are studies underway on the relationship between brutality and violence on television and the rising crime rate on our city streets? For that matter, Johannes Gutenberg's first printing press caused much furor in 1454. Why?

There are additional events to consider while we decide whether or not reading can change the nature of reality. Almost twenty years ago Robert B. Downs wrote Books that Changed the World. More recently in 1970, MacMillan published Down's selections for Books that Changed America. Among the twenty-five influential books in America Downs listed: Common Sense by Thomas Paine; History of the Lewis and Clark Expedition; The Book of Mormon by Joseph Smith; An American Dilemma by Gunnar Myrdal; The Affluent Society by John Kenneth Galbraith; Silent Spring by Rachael Carson; Uncle Tom's Cabin by Harriet Beecher Stowe; Democracy in America by Alexis de Toqueville; Looking Backward by Edward Bellamy; plus books in the field of sociology and science. Downs called books "dynamic and powerful instruments, tools or weapons" (Arizona Republic, 1970).

Lincoln and Downs must have agreed on the power of books, for on meeting Harriet Beecher Stowe, Abraham Lincoln is credited with asking, "Is this the little lady whose book made such a great big war?" (Russell, 1969, p. 286).

We also have testimonials that attest to change brought about by reading a specific book. Luther Burbank, an American horticulturist, said that reading The Origin of the Species by Darwin changed his whole life (Russell, 1969).

Phyllis Diller credits Claude Bristol's The Magic of Believing with changing her life (Arizona Republic, 1973). Until thirty-five years old, she described herself as "a human mess, hypersensitive, scared, a dirty look would put me in a fetal position." Miss Diller was a fifty-dollar-a-week copy girl in a department store's advertising section. One day she saw The Magic of Believing on her supervisor's book shelf. She buys the book "by the carload" to give to friends.

In his book called Stride Towards Freedom Martin Luther King said that during his seminary days the writings of Walter Rauschenbush provided the theological basis for his social concern.

And what about educational research? What does research say about the impact of reading? Do we have any documentation or facts for reading changing the nature of reality? David Russell aptly dealt with this question when he said, "The established facts about the effects of reading are fragmentary and elusive. It is not enough that some great and good men have testified to the power of books in their lives" (Russell, 1970, p. 399).

Yes, the research does exist, but it is fragmentary and elusive, yet so important to all of us as practitioners. The research that has been done in the area falls into two discrete categories: (1) memory studies and (2) research studies involving immediate responses in specific reading situations. The memory research is dependent upon an individual's recall of past literature and subsequent influences. Although there have been several problems with such research, such as biased questionnaires, we will examine five representative studies.

In 1948 Nila Banton Smith conducted a study of fourth through eighth graders. The teachers asked the children if anything they read ever changed their thinking and attitudes. Of the 502 student responses, sixty percent indicated a change in attitude. Other responses mentioned were changes in concepts, ideas, and understandings.

Six years later Sam Winegarten reported the results of his survey of 1,256 adolescents and adults (cited in

Russell, 1970). His two questionnaires focused in on the personal benefits of voluntary reading. Sixty-one percent of the respondents indicated that voluntary reading helped them understand more fully the meaning of life. The respondents also indicated that the most useful books were: The Bible; Seventeen; Seventh Summer; and Of Human Bondage.

In 1963 Russell (1970) presented a paper at the American Educational Research Conference in Chicago which revealed the results of a survey conducted with elementary, secondary, and college level teachers. He asked these individuals to list the books that most affected them in their childhood, adolescence, and adulthood. The most frequently listed effects were: contribution to values; a philosophy of life or religious convictions; a provision for an increased understanding of human behavior and problems. Interestingly enough, the most rarely mentioned effect was the benefit of escape and relaxation.

Shirley's study (cited in Duggins, 1972) of 420 tenth, eleventh, and twelfth graders found results similar to Nila Banton Smith's in 1948. While only sixteen students reported no personal influence from reading, over fifty percent of the students reported that reading influenced their concepts and attitudes. The implications from this study for current classroom practices were also intriguing. The students reported that only twenty-three percent of their assigned reading significantly influenced them and that over fifty percent of the non-fiction they voluntarily read had an influencing impact. Perhaps teachers should reconsider the practice of assigned readings and reanalyze why they seem to favor fiction over non-fiction in their assignments.

In 1975 Culp surveyed 158 college freshmen. Eighty percent of these subjects indicated that reading had influenced them extensively, with attitudes being the most commonly changed area. Other responses indicated that literature had influenced self-image, awareness of moral and ethical issues, sensitivity to others, and an awareness of social problems.

Research in the other area, immediate responses in specific reading situations, is not as plentiful. We will be examining nine representative research studies that span more than three decades. Most of these studies hold much promise in documenting the impact of reading.

One of the earliest studies was conducted by Jackson in 1944. The study investigated the effects of a favorite short story about blacks read aloud to white southern junior high students. Although this treatment, the story read aloud, and the pre and posttest were all administered within a class period, there was a follow-up posttest two weeks later. The initial change in attitude was not retained in the posttest.

Ten years later Feltman (1954) utilized rating scales, informative tests and interviews with fifty-four eighth grade girls to study the effects of three selected books upon their vocational interests and preferences. The experimental group's results showed a statistically significant attitude change towards the occupation depicted in the three books and more gains in knowledge about the occupation than did the two control groups.

In 1965 Fisher (1968) conducted a three-week study with fifth graders. He had three groups of students: one group read six favorable stories about the American Indian; one group read and discussed the favorable stories; and one group had no exposure to the six stories. The results showed that the independent reading of the material caused the experimental group to have a significant attitude change toward the American Indian. The experimental group that discussed each selection following silent reading had an even more significant change in attitude. Fisher also analyzed other variables such as I.Q., reading achievement, race, sex, and socioeconomic status.

Two years later Tauran (1967) conducted similar research with 121 third graders; however, he also examined the negative and positive effects of literature. Four favorable and one unfavorable story (created by Tauran) were given to the 121 Caucasian middle class third grade students. The results indicated the following: (1) racial ideas of third graders can be influenced in positive and negative directions; (2) racial attitudes of younger children are more flexible than adults; (3) it is possible to strengthen an initial positive attitude in children in such a way that they will be able to withstand unfavorable information.

Holdsworth (1968) conducted research with thirty nurses to examine the effects of a selected book about comatose patients. After a week in which the nurses were to read the assigned book, Holdsworth reported a significant and favorable change in attitude by the nursing students towards comatose patients.

Several years later Kimmel (1976) investigated whether fifth graders' attitudes towards foreign countries could be influenced by reading in a period of three months. The twenty-two students had access to books, tapes, displays, and learning centers about four countries: France, Israel, Spain, and Russia. They were asked to complete a reading questionnaire on their reaction to the book and to participate in a personal interview at the end of three months. The students did not interact with their teachers on their reading. Kimmel concluded that, "If children are to get the most of their reading, they need not only the books but also the hands to guide them" (p. 100). As surmised, there was no significant attitude change in the experimental group towards the countries.

Two studies in the seventies dealt with the influence of reading upon the attitudes of children towards the elderly (Fabian, 1977; Levine, 1977). Fabian's study reported no significant change in attitude by fourth graders, while Levine's study with junior high students did find a change at the .05 level of significance. Fabian's research with the 104 fourth graders lasted only one week and utilized the three group design as Fisher's did. Levine's study with 220 seventh and eighth graders lasted eighteen weeks and utilized 42 books of mixed genre portraying the elderly in a favorable light. In the Levine study the reading was voluntary and the teacher was asked not to interact with the students about the contents of the books.

The last reported study was conducted by Bond in 1979. The purpose of the study was to investigate the effect of reading on the attitudes of physically nondisabled eighth graders toward physically disabled. The variables of reading levels and sex were also examined. Five stories with physically disabled male main characters were assigned to be read by the treatment group. Although there was no significant difference between the students who had read the stories and the students who had not read the stories, Bond pointed out that the study raised some questions regarding methodological considerations for future research on attitudinal change.

This look at individuals' reports on the impact of reading and at data gathered by research leads us back to pondering Russell's question: Can reading change the nature of reality? Can it change us as persons?

If we respond affirmatively, then we as teachers must make some decisions about our responsibility to

learners. Now let's brainstorm some ideas. (The following responses were offered by persons in the audience)

It is the teacher's responsibility to:

1) Not impose definitions of reality

2) Try to deal with the philosophy of the school (if closed)

3) Perceive as objectively as possible

4) Guide motivation in all aspects

5) Allow for and encourage different viewpoints

6) Know students individually and create a climate of acceptability

7) Make students aware of the process of acquiring values

8) Build a strong parent-school tie

9) Insure the proper teaching of the basic skills (critical)

10) Allow lots of practice

11) Provide a wide variety of materials

12) Provide a model--read yourself

13) Allow for self-selection of reading materials

14) Teach evaluative reading/thinking skills

15) Guide learners into a variety of materials

16) Introduce Sustained Silent Reading or time for reading

17) Provide opportunities for reacting creatively to reading

18) Delete the traditional book report

19) Enjoyment--a goal of guiding reading

Russell has provided us with a theoretical base on which we can proceed as practitioners. As we continue to meet with reading teachers, let's also continue to

discuss Russell's admonition that we need to do more about teaching reading for personal development. Let's translate the discussion into practice with learners and report on the results of students' impact with reading.

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THE HISTORICAL ROOTS OF SPEED READING

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In 1962, George Spache summarized the results of various eye movement studies that established 800 to 900 words per minute as the maximum optimal rate at which the human eye can process printed English words. Two decades later that maximum rate for reading all the words remains unchallenged by any reputable scientific research. Yet, a commercial speed reading industry flourishes as never before, feeding on a commonly accepted notion that one can learn to read at rates of thousands of words per minute.

The rise of the "super-speed" industry began in earnest in 1959, when Evelyn Wood opened her first Reading Dynamics clinic in Washington, D.C. This educational-business enterprise experienced such phenomenal success that by 1967 there were over 200 Wood Reading Dynamics clinics spread throughout most major American cities, teaching a total of 45,000 students per year (West, 1967). In addition, by the mid-1970's, numerous other companies were competing with Reading Dynamics for the dollars so many Americans were willing to spend on "speed."

The continuing success of such speed reading courses, the high prices so many are willing to pay for them (in 1979, in Phoenix, approximately $400.00 for the Wood course), and the willingness of so many to believe in phenomenal potential reading rates despite the existence of scientific evidence to the contrary, are some of the indicators of the value Americans place on speed and efficiency in our modern culture.

Today, efficient and excellent reading ability for adults is strongly (and erroneously) equated with very rapid reading. But how did this modern day emphasis on rapid reading arise? Western civilization has been literate, in some form, for hundreds, even thousands, of years. Only in recent times, and especially (though not exclusively) in America, has rapid reading become a cultural value.

The growth of rapid reading as a cultural value could not occur in America until reading had become primarily a silent, personal activity; until there existed a means of accurately measuring reading

behavior and ability; until silent reading was being taught in the classroom; and until methodologies had been developed for teaching this new rapid and silent reading. This paper traces some of the cultural, economic, technological, and educational developments that have contributed to the origin and growth of speed reading as a modern American historical phenomenon.

Reading instruction in the early days of America's history was primarily aimed at providing children with the skills necessary to read the Bible. The majority of early colonists were Protestants and subscribed to the doctrine that each man was directly responsible to God for his own salvation and must not rely on anyone else's interpretation of Scripture but his own. Thus, it was a religious duty to see that children learned to read. Moreover, few people could afford books. If a family owned any book it was almost invariably the Bible, and the fortunate member who could read found it his duty to read aloud from the Bible to other family members. Reading was largely an oral and social activity in a family-oriented society. Instruction in reading was primarily oral in the classroom and aimed at producing effective oral readers.

Only as the twentieth century approached and the industrial revolution's effects became more dominant in society did reading as an oral and social activity give way to more varied and personal uses. By the turn of the century economic and cultural factors were such that the oral transmission of knowledge and information was no longer a vital necessity. Literacy was becoming widespread, books and magazines were proliferating and were affordable to many, and popular literature was varied and aimed at individual tastes. The need for the family to gather in a single room for warmth and light was diminishing, and with it, so were common reading interests. Later, the content and style of reading matter would adapt even further to the tempo of modern life, not only for the adult public, but in the classroom as well.

At about the same time that socio-economic factors were influencing the nation's reading purposes and habits (c. 1900), events were occurring in educational research and theory that would profoundly alter the instructional and evaluational methods in reading education. In 1884, in an informal first study of adult reading rate, Romanes found that some subjects read and answered questions four times more rapidly than did others (pp. 136-137). In 1894, Abell reported that some read six times faster than others. Unsophisticated as these studies may have been, they marked the

beginning of efforts to quantify both rate and comprehension of reading. In 1897, Quantz reported wide variations in words read per second. He concluded in his lengthy study that rate of reading was affected by visual perception, power of concentration, mental ability, and amount of practice. Lip-reading was noted to adversely affect rate.

In 1879 the first study of eye movements in reading was reported by Javal (cited in Tinker, 1936), and in 1901 Dodge developed a method to make photographic records of eye movements during reading (cited in Tinker, 1936). Technological advances were giving a scientific reputability to the study of reading and were making it possible to quantify reading behavior.

Educational theorists and psychologists, attuned to the changing times and the advances in research, were proposing changes in educational aims and methods. In 1894 Francis Parker, a vocal and influential educator, was saying that oral reading had nothing to do with meaning (cited in Smith, 1965). In 1908 Edmund Huey, the pioneering educational psychologist in reading, wrote that oral reading was an exercise in speaking, whereas real life reading, which was silent, was aimed at "thought getting and thought manipulating." He argued that the reader must learn to read selectively at a variable rate, flying over pages that are of little value. Huey put a premium on the reader's time:

> many a page has almost nothing that the reader wants...there simply is no sense in reading such matter carefully at the regulation pace of oral reading . The reader cannot afford it. Such reading costs the reader his time, and one who has been practised in the feeling values in reading will fly over such pages, delaying only at the occasional oases that appear in the desert of words. In such cases almost everything is in favor of the rapid reader. Not only does he save valuable time, but...he holds in his grasp at every moment a larger total of meaning, and sees each part in a better perspective. (p. 360)

Numerous studies during the period of 1915 to 1918 supported Parker and Huey's arguments that silent reading was superior to oral reading, not only for rate, but for comprehension as well.

We have examined, thus far, three developments in a thirty five year period of history (c. 1880-1915) that all helped set the stage for the change-over from oral to silent reading in the classroom: the transition

from an agrarian, family-centered society to a modern, relatively affluent, industrial and literate society; the advances of technology and knowledge in research; and the call from educational theorists that instruction be adapted to the needs and knowledge of modern times. By 1915 there remained only the need for a method to measure reading ability efficiently in the classroom and the change-over would begin.

Daniel Starch provided just such an instrument. In 1915 he devised a standardized silent reading test and reported that the two most important factors in reading were comprehension and speed. The race was on. Soon a host of such tests flooded the market and teachers began "teaching to the test," which inevitably meant emphasizing silent reading and speed. It became widely apparent that one could read silently much more rapidly than he could orally, and soon children were being admonished not to move their lips while reading. It also became evident that students were reading more books during the school year, and so more and new materials had to be provided.

By 1925 methods of teaching silent reading, and material designed for silent reading instruction, were well-established in the schools. Boards of education were providing materials and training for teachers. Silent reading was being taught almost to the complete exclusion of oral reading.

Precision, efficiency, and speed were the badges of a modern America, and efficient silent reading had become a value in the school and in society. The seeds of speed reading as a cultural value had been sown.

Now that the primary purpose of reading had changed from a social function to one of personal "information gathering," now that technological and educational tools existed to measure reading behavior and ability, and now that the classroom was geared to silent reading instruction, educators and investigators could turn their attention to developing methods to increase rate of reading.

In 1920 the first doctoral dissertation on speed of reading was completed by John A. O'Brien (cited in Smith, 1965). In 1921 O'Brien published Silent Reading, which contained several chapters specifically on the psychology and teaching of rapid reading. O'Brien drew from several earlier experimental investigations on the effect of speed drills on rate of reading (Bowden, 1911; Oberholtzer, 1915; Gray, 1917; Peters, 1917--all cited in O'Brien, 1921). He described an experimental method

he had used to improve the silent reading rate of elementary school children. Students were motivated as to the importance of rapid reading, then told to read as rapidly as possible while still understanding the passage. They were drilled daily in four minute sessions. Drills were followed up by "reproduction" sessions in which students were randomly quizzed on what they had read.

Writers and investigators during the 1920's relied on the procedure established by O'Brien in his seminal study. Clarence Stone, writing in 1926 for elementary teachers, advocated the simple procedure of: 1) telling the students to force themselves to read rapidly for brief time periods, 2) checking comprehension through follow-up questions or brief written summaries, and 3) keeping records of progress. Later experimental programs in colleges used the same methods (Carroll, 1929). Stone also urged the use of "phrase-flashing," a procedure in which phrase-cards were manually exposed to the students' view for brief time periods in order to force more rapid perception.

The most careful guide to teachers for improving the rate of slow readers was expounded in 1927 by Arthur Gates. He listed 11 techniques to employ in order to insure success:

1. Select highly interesting material.

2. Select for the first stage of the work material that is fairly easy and that contains very few unfamiliar words. It is advisable to arrange all conditions, if possible, so that the pupil may make obvious improvement from the first. This is the strongest incentive to making progress.

3. During the early part of the remedial work, avoid the use of comprehension exercises of a type that delay the actual work of reading and interrupt the continuity of thought.

4. Introduce the remedial practice with vigor and the most hopeful attitude possible.

5. Measure and record results and display evidence of improvement. Be enthusiastic about any progress that is being made.

6. Do not continue practice for speed beyond the beginnings of fatigue or boredom.

7. Repeat the practice at intervals during the day as frequently as is consistent with convenience and interest.

8. Curtail, for a time, other reading--especially oral reading--of any type that is likely to be slow and antagonistic to the new techniques; and, thus, give the latter the fullest possible opportunity to function.

9. Gradually introduce the more difficult types of reading--when possible, under observation.

10. Anticipate, and be prepared to render, abundant cheerful aid and encouragement when, in the early stages, the pupil encounters confusions, failures in comprehension, periods of nervousness, irritation, and despair or when he encounters such plateaus later. The task of supplanting old habits by new ones is a trying one.

11. Keep an eye on the pupil for some time after he has apparently brought the new techniques under control. A relapse is always possible, especially in the early stages. (pp. 122-123)

Though his advice was aimed at elementary teachers of slow and even "remedial" students, many elements of Gates' procedure are standard practice in modern day speed reading courses for adults. Practice materials are easy and lightweight to insure rapidity and success; comprehension checks are not stringent or are nonexistent; instructors maintain a vigorous pace with much positive encouragement; and, aware, as Gates was, of the near inevitability of relapsing into old habits and slower speeds once training ends, the modern day courses usually offer free refresher classes for graduates.

As methodologies for teaching silent reading developed in the 1920's, a few educators overreacted in their desire to break away from the "old-fashioned" oral reading, to the point of arguing against any oral reading instruction at all. Most, however, continued to recommend a judicious use of both (Walty, 1949, p. 6).

From the perspective of 1979, some of the early methods proposed by advocates of rapid silent reading may seem somewhat humorous, if not overly zealous. At least two educators proposed group rapid-reading drills in which students would read to find the answer to a previously stated question. The first student to find

it would stand up and recite the answer (Gist & King, 1927; Stone, 1926). In a livelier version proposed by Nila Banton Smith, factual questions would be listed on the blackboard and the class would be divided into teams. The first reader to find the phrase in the passage that carried the answer would race to the board and write it down, thus scoring a point for his team (cited in Stone, 1926). Presumably, the thrill of competition was a key motivating factor in reading faster.

Most procedures written during the 1920's for improving rate of reading were intended for teachers. However, there were at least two procedures written for the reader who wished to improve through self-instruction. In 1924, in How to Study, A. Kornhauser may have been the first to formally expound a procedure specifically intended for the secondary or college student interested in improving his own rate of reading. The procedure was straightforward and unadorned by any drill work or gimmickry:

1. Keep forcing yourself to read rapidly. Put forth a strong and persistent effort. Urge yourself continually to speed up...

2. Read phrases and sentences, not words...

3. Learn to skip wisely. "Hit the high spots"...

4. Test yourself every few days to see what progress you are making in speeding up. (cited in Training One's Self to Read Rapidly, 1924)

Over 50 years later, we are hard-pressed to add anything of real value to this approach, either from technology or in methodology.

In 1929, Walter Pitkin authored a complete "how-to" text entitled The Art of Rapid Reading. It was the first book of its kind and was aimed at the busy professional man who found himself in a competitive, modern world inundated by a hitherto unprecedented flow of information in printed form.

The book was for the layman and, as such, was unscientific. Over half of the book's 233 pages were filled with reproduced newspaper articles, essays, speeches, and textbook chapters intended for practice exercises. Approximately 35 pages were devoted to the causes of poor reading, 10 pages to the need for rapid reading, and only about a dozen pages actually contained specific procedures for improving rate. Pitkin's advice

was to be selective in what one read; to read in phrases and whole sentences for the gist; to read actively with specific purposes; to read with good lighting and good body posture; to skim when appropriate; to try to widen one's "eye grasp"; to work at improving one's vocabulary; to keep records of improvement; and to practice, practice, practice under time constraints.

Pitkin didn't really offer much that was different from what various educators had previously said, but he was the first to offer it to the public in an organized form. And he was one of the first to recognize the financial potential in courting a specific adult reading population--business and professional men.

Pitkin saw that there was an urgent need for a new type of reading to satisfy the demand for keeping informed. He distinguished three purposes for reading which determined how one read. One could read to learn--to master a subject--and the difficulty and strangeness of the subject matter would determine the reader's pace. Or, one could read for pleasure, in which case the reader's own personal taste and style would determine his pace. But, if one wanted to read for the third and newly important purpose, that of gathering information, then his pace had to be determined by a cost-effectiveness valuation of his time:

> How different the procedure when we read in order to keep in touch with affairs in our profession, our art, our trade, or our business! Here Father Time sets the pace, and Competition is the referee. We must cover ground or lose out. We must pick and choose material that specially touches our practical interests and fortunes. We dare not let our private taste and pleasure rule us. (pp. 7-8)

To the man immersed in the giddy business climate of 1929, Pitkin's book might have appeared to be a life-buoy that would pull him above the rising tide of print that threatened to engulf him. Certainly, Pitkin's language was calculated to exploit the aspiring businessman's fear of losing ground or of making a mistake through lack of information. Indeed, high-pressure advertisements for modern-day speed reading courses echo Pitkin's urgent arguments.

Prior to 1929, before rapid reading was popularized for the public, the language of rapid reading proponents was, perhaps, less rhetorical and more objective. The increasing pace of life and changing societal needs had created a felt need for better reading skills. In the 1960's and 1970's, mass media advertising would be

feeding and exacerbating that felt need. At some point, perhaps with the publication of Pitkin's book, the merchandising of speed reading began, and scholarly, but less profitable aspects of rapid reading theory and methodology slowly gave way to glibly touted "miracle cures" for the ills of slow reading.

With the publication, in 1929, of Pitkin's The Art of Rapid Reading, methodologies for reading-rate improvement moved out of the laboratory and classroom and became public property. The seeds of speed reading had sprouted and would grow, slowly but persistently, over the next thirty years.

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MIGRANT MATH SKILLS TRANSMITTAL SYSTEM

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Skills-Based Reporting

The need for a better way of providing teachers with information about the academic achievement of migrant students is one which has long been felt by the classroom teacher. In response to this need, the Migrant Division of USOE authorized and has overseen the development of a system by which basic skill information in reading, math, oral language, and early childhood education can be communicated from one teacher to another through the Migrant Record Transfer System.

The skills-based reporting system is designed to allow teachers to report the actual skills children have achieved and/or are working on in their classroom. With this kind of information made available to the child's new teacher, appropriate placement into the new classroom program may take place more quickly for a more continuous education of the migrant child.

The Math Skills List

The Math Skills List is a catalog of basic math skills which was developed by hundreds of educators from across the United States. The list is not exhaustive and is not intended to represent a curriculum or an implied learning sequence, but is designed to provide a means by which a child's progress may be reported from one user to the next via the Migrant Record Transfer System.

The Math Skills List is contained in a Master List covering skills from kindergarten through 12th grade. Mini-Skills Lists for K-3, 4-6, and 7-9 have been extracted from the master list showing those skills which were found to be typical of the teaching being done at those grade levels. However, every child will not be at the mini-skills level for his grade, and reporting should take place at his achievement level rather than his actual grade level.

Each of the lists--Master and Mini-Skills--is broken down into broad collections of skills called

Areas. The math areas are Readiness, Number Meaning, Whole Numbers, Fractions, Decimals, Percent, Measurement, Geometry, Probability and Statistics, and Sets. Each area is divided into related groups of skills called Topics. For example, Whole Numbers includes the topics of Basic Characteristics, Addition, Subtraction, Multiplication, Division, and Application.

Topics are further divided into related groups of skills called Subtopics. For example, the Whole Number-Basic Characteristics subtopics are Place Value, Expanded Notation, Number Line, Even/Odd Numbers, and Composite/Prime Number. Skill statements which make up each subtopic are written as an objective learning statement with a given stimulus and an expected student outcome. Each of these skills is followed by an illustrative example as a means of providing clarification for the user.

Math Skills Reporting

Reporting in the system is done through the Migrant Student Record Transfer System and its computer. A child's skills may be communicated at the area, topic, subtopic, or skill level. The system is designed to collect data as it is reported and accumulate related skills into the appropriate groupings. Once all the skills in a subtopic have been learned and reported, only the subtopic would be reported and so on until ultimately only the 10 areas would be needed to report the entire list.

Summary

The Math Skills List is a catalog of skills taught in math components of migrant programs. It was developed to allow one teacher to communicate with another concerning the child's academic growth. It is designed to accumulate the reported data for reporting at another site to allow for a more continuous education of the migrant child.

READING ENCOUNTERS OF THE FIRST KIND

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The work of D. O. Hebb (1949), Jean Piaget (1952), Jerome Bruner (1960), J. McV. Hunt (1961), Benjamin Bloom (1964), and Mark Rosenzweig (1972) regarding the positive effects of a stimulating home environment on children's cognitive growth, language development, and reading achievement has helped parents become aware of the important part they play in their children's early instruction.

A reexamination of the previous "hands off" policy of educators towards parents in teaching their youngsters to read is needed for several reasons: Parents are more demanding of their right to be involved in whatever they are asked to support through tax dollars. The outcry from parents has not increased the amount of money appropriated. Nor have newspaper articles and television programs emphasizing the failure of public education to provide students basic skills improved public relations. Indeed, parents are becoming alarmed by the accelerated and ever-changing societal demands regarding their children's future. Yet Balow (1965); Willis, Morris, and Crowder (1972); and Lane, Pollack, and Sher (1974) have implied that reading instruction by trained lay persons can be as effective as teaching by specialists.

Dolores Durkin's studies in early reading are probably the most widely quoted. She (1966) found that early readers achieved higher reading scores than youngsters who did not read until first grade and continued to surpass other children throughout their entire elementary school years. However, 12 years later, Durkin (1974-75) showed that the advantage of learning to read early did not extend into grades three and four. Although, she claimed, readers would have been more advanced had the schools' instructional programs provided individual attention and adaptation in relationship to the early readers' achievements. Additionally, she stated "a family which fostered preschool reading ability would continue to foster achievement, with or without an instructional program in school."

Durkin (1972), in commenting on parents' and teachers' "tales" about very young children learning to read on their own, noted that they did not learn to read by themselves but rather had parents reading to them, parents who valued reading, and parents who spent a good deal of time answering their children's questions. She said, someone must help them "crack the code" to allow this early start.

Doman (1964) made a strong case for parental intervention in teaching their youngsters to read. At the same time, another popular study conducted by McKee, Brzienski, and Harrison (1964-69) concerned early reading instruction. They concluded reading skills could be taught to kindergarten and younger children, and that such youngsters retained superior reading behaviors through the elementary grades "when the reading program in subsequent years capitalized on their early start."

King and Friesen (1972) also found that early readers selected in kindergarten outperformed non-early readers at the end of first grade. However, intelligence was not considered--the mean intelligence score was 11 points higher for early readers than non-early readers--115 to 104 (Lapp & Flood, 1978, p. 62). Beck (1973) concluded early readers had significantly higher intelligence scores than their non-early associates. But, since intelligence tests in school bank heavily on youngsters' verbal and reading abilities it is uncertain whether or not the early readers' more advanced communication skills were responsible for their disproportionate scoring advantage on these tests.

Home and School

The present authors' varied experiences working with parents and children have shown a definite need for educators to "share" their skills and knowledge with parents and assume positions of leadership in helping them understand how they can benefit their children during this critical period of development.

Durkin (1972) interviewed parents of children who learned to read early and those of children who did not learn to read until first grade. She found many expressed great confusion and concern about what to do and what not to do regarding preschool reading instruction. These authors strongly concur with her findings.

At home parents have the time, and opportunities exist, to provide valuable one-to-one early reading

AS1
1.0
1.1
1.25
1.4
1.6
2.8
2.5
3.2
2.2
3.6
2.0
4.0
1.8
MICROCOPY RESOLUTION TEST CHART

experiences. Under these conditions, relationships supply youngsters with badly needed individual, adult attention, and when handled properly, establish a healthy attitudinal base for continued learning in school. As a result the teacher's job is made much easier and more rewarding.

Nevertheless, some of the confusion among parents concerning their children's learning to read prior to attending school can be traced to a perpetration of the following fears:

Fear #1: In the process of preschoolers learning to read they will experience frustration and anxiety which may lead to long-term detrimental effects.

Fact: When parents understand the role they play, preschoolers are apt to profit greatly from early exposure to written language and an attempt to relate printed material to meaningful communication. Kohlberg (1968) stated:

> Compared with cognitive structural transformations required for development of spoken language at age 2 or 5; the cognitive structural requirements in tying together spoken and written signs seem modest. Because reading and writing (especially reading) are relatively low-level sensorimotor skills, there is nothing in the cognitive structure of the reading task which involves any high challenge to the older child. In contrast, the identification of letters and words may be challenging fun for younger children. (pp. 103-108)

Fear #2: If reading instruction becomes the focus for pre-schooler's learning, many other values of this growth period may be overlooked and the youngster will be deprived of a carefree childhood.

Fact: When parents employ early reading as a means of enriching their childrens' learning experiences, there can be no question as to its contribution toward learning. Few joyous experiences compare with those parents and children share

learning words or sentences and when they ultimately read books together!

Fear #3: A child who enters kindergarten or first grade knowing how to read will be bored or cause problems.

Fact: Most of the resistance toward encouraging parents to teach their youngsters to read has been related to the school's inability or failure to provide differentiated instruction.

Those who can't or won't read during their primary years of schooling are headed for serious difficulties; either academically or behaviorally.

In comparison, those who can read prior to entering first grade stand a good chance of being labeled "gifted." Rosenthal and Jacobson (1968) claimed this may be the single best predictor of success in school. At this level the "self-fulfilling" prophesy works quite consistently.

However, an inherent danger in parents' interpretation of this issue is an overly zealous desire for their children to excel intellectually, to "manufacture" giftedness and push the value of learning to read completely out of proportion to other critical developmental processes.

In working with preschoolers parents must bear in mind that at no other time in a child's life will learning be more spontaneous, enjoyable and totally detached from the amount to be learned or a set of time limits in which learning must take place.

By responding appropriately to a young child's desire to learn to read, instead of postponing this learning until school age, parents make themselves an integral part of the educational process. By assuming some responsibility at this point they help decrease the artificial distinction between learning that happens in the home and that which occurs in school. By providing successful experiences before children enter formal schooling they not only assist in developing various reading skills, but more importantly set the stage for instilling in their children a vigorous hunger to pursue reading.

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